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JOURNAL

OF THE

ASIATIC SOCIETY OF BENGAL.



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(Nos. I TO IV.—1879: with 19 Plates and 2 Maps.)

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"It will flourish, if naturalists, chemists, antiquaries, philologers, and men of science in different parts of *Asia*, will commit their observations to writing, and send them to the Asiatic Society at Calcutta. It will languish, if such communications shall be long intermitted; and it will die away, if they shall entirely cease." SIR WM. JONES.

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ERRATA.

J. A. S. B., Pt. I, Vol. XLVI, p. 231, line 23, *Dele* 'Jains and.' This error was due to a misreading of an ill-written Urdu manuscript.

Ibid. p. 231, line 1, *for* '1730 A. D.' *read* '1721 A. D.' and in line 2 *for* 'son' *read* 'chela.' In both these instances I was misled by the Gazetteer. For the corrections I am indebted to Mr. Irvine in J. A. S. B., Vol. XLVII, Part I, pp. 286 and 367.

JOURNAL

OF THE

ASIATIC SOCIETY OF BENGAL.

Part I.—HISTORY, LITERATURE, &c.

No. I.—1879.

Prehistoric Remains in Central India.—By J. H. RIVETT-CARNAC, ESQ., C. I. E., F. S. A., M. R. A. S., &c.

At a meeting of the Society held in 1874, some iron implements dug out of the barrows of the Nagpore district of the Central Provinces were exhibited by me, and a brief notice was then given of those grave-mounds and their contents. I have long intended preparing for the Society the detailed description together with sketches of these interesting remains then promised. But various circumstances have delayed the working up of the notes taken on the spot and the copying of the sketches, and I am only now able to offer them to the Society.

Last year when in France, I paid a visit to the Museum at St. Germain-en-Laye, celebrated for its prehistoric collection, and there the resemblance between the remains, dug out of tumuli in Brittany and other parts of France, and the contents of the Nagpore barrows presented itself in the most striking manner. M. Bertrand the Director of the Museum and President of the Society of Antiquaries of France, to whom the subject was mentioned by me, strongly urged the preparation of a detailed account of the Indian grave-mounds and their contents, together with sketches, so as to admit of further comparison between the Indian and European types.

The subject is well known to the Society, but it is hoped that the following details may not be without interest, and that they may assist in directing further attention to the extraordinary resemblance between the Prehistoric Remains of India and of Europe.

Barrows or grave-mounds, surrounded by circles of stones, are found in several districts of the Nagpore province. They have been examined

and described at various times by Colonel Glasfurd, Colonel Godfrey Pearse, R. H. A., and Mr. J. J. Carey, C. E. The late Rev. Stephen Hislop, well known for his interest in all antiquarian subjects, accompanied Sir Richard Temple, the then Chief Commissioner of the Central Provinces, on an exploration of the Bori remains during the rainy season of 1864, and it was then that occurred the accident which resulted in Mr. Hislop's lamented death.

Similar barrows were found in the Nizam's territory and in Madras by the late Colonel Meadows Taylor, C. S. I., and an interesting account of that officer's researches, by which the similarity of the remains found in India and in Europe is clearly demonstrated, was published in the Journal of the Royal Irish Academy. The Journal of the Asiatic Society also contains descriptions by Colonel Dalton, C. S. I., of similar grave mounds and circles in the hilly country of Chutia Nagpore, which in many of its conditions resembles the districts of the old Nagpore province.

The most extensive of the many groups of this class of tumuli that are found scattered over the district of Nagpore is situated near Junapani, a hamlet lying about 5 miles to the west of the civil station of Nagpore, on the high road to Katole. The proximity of these barrows to Nagpore has marked them out for careful investigation, and they have been visited and opened at various times by the late Rev. S. Hislop, Mr. Henry Dangerfield, C. E. and Mr. Hanna, C. E. No detailed account of the discoveries has as yet been published. The following notes refer chiefly to some explorations made as far back as the cold weather of 1867 by Mr. Alfred Lyall, C. S., then Commissioner of the Nagpore S. Division, Mr. Blanford, F. R. S. and myself.

From the people of the neighbourhood, and even from the Bráhmans and other learned persons of Nagpore, who speak with authority on the ancient history of the province, no satisfactory information regarding the tribes who constructed these barrows is to be obtained. Some will tell you the story that these mounds are the work of giants, or of the Gaolees or Shepherd kings, regarding whose rule in Central India, at a period prior to the Aryan invasion, a deep-rooted tradition exists. That the circles are very old, the condition in which they are now found distinctly shews, and the remains discovered therein leave no doubt that they were once the burial-places of a people of whom these circles are now the only trace that remains to us.

The southern slope of a line of low bare basaltic hills, which rise just beyond the village of Junapani, and which form the chief feature in the scenery of Nagpore and its neighbourhood, is covered with these barrows. The largest group consists of 54 tumuli. A smaller group situated on an adjacent spur, at about 300 yards from the main body, contains but 10

barrows. Further south again, at a distance of about half a mile, on the other side of the village, is a third group. The position is somewhat low and damp, the ground sloping towards the small stream which runs past the village of Junapani. The remains discovered by Mr. Hanna were dug out from the barrows of this group, and were found in a less perfect state of preservation than the iron implements from the tumuli situated further up on higher ground on the hill side. A fourth and still smaller group, situated further north, was examined by Mr. Henry Dangerfield. For several miles round, similar collections of barrows, which have not yet been noted or explored, are to be seen festooning with their dark funereal boulders the slopes of the low trap hills which extend far south towards the Wurdah river.

A rough plan of the Junapani circles accompanies this paper; see Plate I.

In all these groups the tumuli are of the same type, consisting of circular mounds of earth of various sizes, surrounded by single and, in some instances, by double rows of trap boulders, selected from the masses with which the hill-side is strewn and the presence of which in great numbers, ready to hand, doubtless suggested the locality as a burial-place to the tribes so many of whose members lie here entombed. The diameter of the circles varies from 20 feet to 56 feet, the tomb being perhaps of large or inferior dimensions according to the consideration of the person buried. No barrow of the groups as yet examined by me exceeds 56 feet in diameter; and 56 feet seems to have been a favourite size, as each group contains several tumuli of exactly these dimensions.

The trying climate of Central India, with its prolonged scorching heat, followed by drenching rain, so destructive to every sort of masonry building, has told with great severity upon even these solid masses of trap rock. They are all more or less wrinkled by age, and in some cases the stone has been split and its outer coating stripped off by the action of heat and damp, and it is doubtful whether the boulders that have thus suffered now retain their original form. There is thus some difficulty in determining whether they have been artificially shaped. It would appear from the resemblance borne by most of the blocks, ranged round the tumuli, to the still undisturbed masses with which nature has strewn the hill side, that, in most cases, the stones were not dressed, but that boulders of about the same size, bearing the nearest resemblance to oblong cubes, were chosen from the masses on the hill side and rolled down to the site of the tumulus, and then ranged side by side in their natural state round the circular mound of earth raised over the grave. Each circle, however, generally contains two or three stones, larger than their neighbours, which from the comparative regularity of shape would appear to have been artificially dressed. It is on these selected stones that the "cup-marks," resembling those found on

exactly similar tumuli in Europe are to be seen. And it suggests itself that the boulders were perhaps specially prepared to receive the inscriptions or ornamentation for which these marks were designed.

So far as can be judged from the present appearance of the stones at Junapani, they were certainly in most instances laid lengthways, side by side, round the edge of the circle, in a manner resembling the arrangement of the stones in the Clava Tumulus figured on plate XI of Sir J. Simpson's "Archaic Sculpturings" (see Plate II, fig. 1 and Pl. V, fig. 1) a work to which it will be necessary to make frequent references in the present paper. Mr. Carey was, I believe, of opinion from the appearance of the stones at the Khywarree barrows examined by him, that the blocks had once been placed on end, and it is not improbable from the position of some of the largest blocks at Junapani, that some of these also may have been so placed. One of the stones covered all over with cup-marks supports this view. It is conical in shape. It is the largest of the many large blocks at Junapani. Its dimensions are as follows: length ft. 10·3; breadth ft. 2·4, and height above the ground as it lies ft. 2·6. This block, and indeed nearly all those surrounding these tumuli have sunk deep into the earth and there is perhaps half as much below the surface of the ground as appears above it. Making allowance for this, the cubic contents of the stone would be say 16,000 feet, and taking 200 lbs. to the cubic foot of trap rock, the weight of this stone would be about 8 tons. The stones on the north side of the circle, whence the drainage of the hill is, are deeply imbedded in the earth, and are sometimes hardly to be traced above the ground, the washings of the hill side, carried down by the drainage of ages, having nearly covered them up completely.

The height of the mounds within the circles of stones is seldom more than from 3 to 4 feet above the level of the neighbouring ground. There is no doubt, however, that the mounds, now nearly as hard as the rock itself, were originally composed of earth, loosely thrown up, and were consequently much higher than they now are. In the course of many years, perhaps centuries, the boulders, surrounding these mounds, have sunk deep into the hard soil, and during the same period the once loose earth has become consolidated and compressed into its present form. In Plate III one of these barrows is shewn, the stones being ranged round the mound shewn in the background. In the foreground are some boulders of a tumulus that has been disturbed and examined.

The number, size and position of the barrows will be best explained by the accompanying plan Plate I. It will be noticed, that the largest barrows are generally placed low down on the slope of the hill, the smaller circles, with the smaller stones being grouped on the top, and it suggests itself, that for the former tumuli the large boulders had to be selected from particular

spots and rolled down the slope, whilst for the smaller tombs stones could be collected without difficulty at the summit or on any part of the hill side.

Although, on no one occasion, has a collection, so varied as that which rewarded Colonel Pearse's exploration of the large solitary tumulus near Kamptee, been discovered, no single barrow at Junapani has been opened without remains of more or less interest being exhumed. The class of iron implements found in these tumuli in different parts of the Nagpore district, and further south again, resemble one another as closely as do the tumuli themselves. Some half a dozen barrows only have as yet been examined, out of the many hundreds which are known to exist, so that further and more interesting discoveries may not unreasonably be expected from future explorations, if conducted on a careful plan.

The remains discovered were all found in the centre of the barrows. The earth, which had to be dug through, was invariably extremely hard and firm, as if many centuries had weighed it down and compressed it into its present compact form, changing soft earth into stiffish clay. The remains were always reached with considerable difficulty. On each occasion that I have examined these tombs, the first indication of "a find" has been broken pieces of pottery of red or black clay, which generally make their appearance at from 2 to $2\frac{1}{2}$ feet from the surface. Immediately beneath these, the fragments of metal implements, and ornaments are come upon, together with further traces of broken pottery in considerable quantity. The fragments are evidently the remains of urns originally placed intact within the tombs, but which, consequent on the tumulus having no interior chamber, have been broken by the masses of earth and stone thrown in to fill up the mound. In two cases the shape of the urns imbedded in the clay was distinctly traceable, but it was found impossible to take them out intact. I regret I did not know at the time, what I have since learnt from M. Bertrand and have seen demonstrated at the Museum of St. Germain, that the pieces, if carefully collected, can generally be joined together after the manner of a Chinese puzzle, and the original form can thus be satisfactorily reproduced.

With the urns the whitish coloured earth (noticed by Col. Meadows Taylor in the Dekhan remains), offering a striking contrast to the surrounding dark soil, is met with. I am unable at present to say of what this substance consists. It is probably the remains of bones. On only one occasion have traces of human remains been found at Junapani, and in this instance six small pieces of bone, weighing $\frac{5}{8}$ths of an ounce only, were obtained.

The implements discovered with the urns are, with one exception, of iron. The most interesting of them are figured in Plate IV, and the following remarks will help to describe generally their peculiarities:

Nos. 1, 2 are pieces of iron, thickly encrusted with lime and rust, found by Mr. Hanna in the group of barrows near the Junapani stream, to which allusion has already been made. The damp situation seriously affected these specimens, and they are not in such a good state of preservation as the other remains found in the vicinity. They offer hardly any attraction to the magnet.

No. 2 was also found by Mr. Hanna in the same group. It has suffered severely from rust, but the form is intact. It resembles a "spud," but it is not improbably a "palstave" of which many specimens have been found in similar tombs in Scandinavia and in Great Britain. It has no "eye" through which to loop the thong by which palstaves are supposed to have been attached to a wooden handle. But I find that, in some of the Irish specimens also, these eyes are wanting, (see figure 275, No. 510, page 384, Vol. I, of a Descriptive Catalogue of the Antiquities of the Museum of the Royal Irish Academy, by Sir W. Wilde, Dublin, 1863). The palstave found at Junapani exactly resembles this specimen.

Similar implements have been found by Col. Glasfurd in tumuli in the Godavery district, and at page 358, Vol. XXIV, of the Transactions of the Royal Irish Academy, in a paper by Col. Meadows Taylor, C. S. I., describing "The Cairns, Cromlechs, Kistvaens and other Celtic, Druidical or Scythian monuments in the Dekhan," will be found figured a similar implement discovered in one of the tumuli of the Hyderabad country. I may mention here incidentally, that Col. Sladen, who made an expedition from Mandalay to the western borders of China, mentioned to me, that implements similar to these, but having in addition the "eye" so well known in the palstaves of Europe, were discovered by him on his travels. Length of specimen $4\frac{3}{4}$ inches.

No. 3 is a knife or dagger, much corroded, found by Mr. Hanna in the same group. The guard at the hilt is perfect on one side, on the other side the rust has flaked off, taking with it the iron of the guard. Length $5\frac{1}{2}$ inches.

No. 4 is a smaller specimen of a hatchet or battle-axe, similar to the one found by Col. Pearse, and resembling Nos. 5, 11 described below. In these specimens the bands are wanting. It will be seen that the rust is coming off the hatchet in great flakes and the bands have most probably corroded. Length 6 inches; breadth 2 inches.

No. 5 is the best specimen of the battle-axe or hatchet that has yet been discovered. It was found by Mr. Henry Dangerfield in one of the outlying groups of barrows near Junapani. The bands, with which the axe was fastened on to the wooden handle, are in perfect preservation. Length 10 inches.

This iron axe bears a remarkable resemblance in shape to the copper

"celt," figured at page 363 of Sir W. Wilde's Catalogue of the Irish Antiquities above referred to. At page 367, Sir W. Wilde shows how this class of celts is supposed to have been fixed on to the handle, and he writes: "Fig. 252 represents 2 simple, flat, wedge-shaped celts passed through a wooden handle and secured by a ligature, possibly of thong or gut."

And on the preceding page, he remarks—

"Left without historic reference, and with but few pictorial illustrations, we are thrown back upon conjecture as to the mode of hafting and using the metal celt. As already stated, this weapon-tool is but the stone implement reproduced in another form, and having once obtained a better material, the people who acquired this knowledge repeated the form they were best acquainted with, but economized the metal and lessened the bulk by flattening the sides. In proof of this repetition in metal of the ancient form of stone celt may be adduced the fact of a copper celt of the precise outline, both in shape and thickness, of one of our ordinary stone implements having been found in an Etruscan tomb, and now preserved in the Museum of Berlin."

In this specimen, however, as indeed in the case of nearly all the iron axes found in Central India, the bands are of iron. And it does not appear unnatural, that, the tribes who used these weapons having discovered the use of iron, and the place of the stone hatchet having been supplied by an improved axe of iron, the ligatures of thong too, should, in like manner, have given way before the bands of iron shewn in the engraving. An axe, similar to this one in nearly every respect, was found by me in the main group of barrows at Junapani. One of the bands, however, was missing. In another case the bands were found loose by the side of a small axe to which they evidently belonged. Col. Glasfurd found in the Godavery district an iron axe similar in other respects to these, but without the bands. I am inclined to think that the bands, being of thinner metal than the weapon itself, may have been eaten away by rust and have thus disappeared. The specimen found by Mr. Dangerfield is in excellent preservation, the spot on which it was found being dry and hard.

This axe was shewn to Col. Maisey, some of whose beautiful drawings of the Bhilsa or Sanchi Topes are engraved in General Cunningham's work. He immediately remarked, that the specimen exactly resembled the weapons carved on the "Topes" of which he had made sketches years before. A reference to Plate XXXIII, Fig. 8, Cunningham's Bhilsa Topes,* will shew the hatchet with bands. In the carving on the Tope the bands are not placed well in the centre. But the accuracy of the native sculptor may have been at fault. A hatchet fastened on to the wood in the manner re-

* See also "*Orissa*" by Dr. Rájendralála Mitra, C. I. E.

presented, would have been liable to fly out of the handle, an accident which the position of the bands of the specimens found in the barrow is better calculated to prevent. In Plate XXXII, Fig. 1, "Fergusson's Tree and Serpent Worship" will be found a representation of a bas-relief on the eastern gateway at Sanchi described by Mr. Fergusson as follows: "In itself it (the bas-relief) represents a family of Dasyus following their usual avocation. On the right hand, two men are splitting wood with hatchets, and what is more remarkable is, that the heads of their axes are tied on to the shafts as if they were of stone. Yet in the same bas-relief we have the tongs or ladles which certainly are of metal; and we can hardly understand a people who could make metal femurs using stone hatchets."

It is probable then, that the carving on the Sanchi Tope is intended to represent a metal hatchet such as that discovered in the barrow and marked No. 5. And it suggests itself that the tumuli at Junapani are the remains of an aboriginal tribe, whose presence on the Sanchi sculptures, in contradistinction to the followers of Buddha, is distinctly traced by Mr. Fergusson. The significance of this point will be noticed more in detail later.

No. 6. A spear-head, much corroded, which was dug up by me from a Junapani barrow. The large axe, with one band, above alluded to, was found by its side; and, as in every instance, broken pottery in large quantities was dug up. Length $8\frac{1}{2}$ inches.

No. 7. Six bangles or bracelets, found by Mr. Henry Dangerfield in a barrow adjacent to that in which the axe was discovered. They are graduated in size, and weigh from $5\frac{1}{2}$ oz. to $3\frac{1}{4}$ oz., the whole set weighing 1 lb. 10 oz.

The metal of which they are composed is apparently copper. A rough analysis that has already been made shows that copper is the principal ingredient, but points to the presence of alloy which is neither zinc nor tin, but which is believed to be gold or silver, possibly both. The bangles are thickly covered with a coating, in which the verdigris of the copper is apparent. But, with it, is a further substance which may be either an artificial varnish, or one supplied by organic matter and the discolouration of the metal during the many years the bangles must have been buried.

An interesting circumstance connected with these bangles is the peculiar ornamentation on one end of each of the specimens. The coating of verdigris and varnish, above alluded to, is so thick, that, at first, the markings might escape notice. But a more careful inspection and the removal of the coating of verdigris shew a series of notches or punched or filed lines, resembling exactly the "herring-bone" ornamentation found on the Irish remains, which is described and figured at page 389 of Sir W.

Wilde's Catalogue before noticed. The number of the punched lines on each ornament varies from 14 to 16, and these are placed in three rows.

I have not Mr. Fergusson's paper at hand, but I think I remember reading in his description of the Amravati Tope, that in the carvings there two distinct races are traceable, the Aryans and a non-Aryan race, the latter wearing heavy bangles of the description shewn in the plate and which are similar to those still worn by the Brinjarah women and by some of the aboriginal tribes.

No. 8 is a small circular clear pebble. It was found by me in barrow No. 37, together with only one small piece of iron and a quantity of pottery. In its dirty state it did not appear very inviting, and I was at first inclined to throw it away together with the earth and stones dug out of the barrow. But as it seemed to be of a different substance from the other stones of the formation, it was preserved. I am not prepared to say that it is really a curiosity. But one side of it bears a striking resemblance to the "Altar Stone" No. 102, figured at page 132, of Sir W. Wilde's Catalogue. It has the four finger-marks on one side, on the other side a larger "finger-mark" corresponding with the large central "finger-mark" of the sketch. It may have been an ornament or amulet, and may have been set in a claw, fastened on to the two central "finger-marks."

The following specimens were all dug out of the barrow at Junapani, No. 37 in the plan, in the presence of Mr. Lyall, Mr. Blanford and myself, in January 1867. Our first impression on visiting the spot was, that as all the barrows were so much alike, it would be well to trust to chance and to open the tumulus nearest at hand. Further examination, however, brought to notice three barrows, rather more imposing-looking than those of the main group, situated at some little distance from it, in a quiet, pleasant spot near a small stream, on the south side of the hill. The centre barrow was encircled by a double row of black boulders. The circles flanking the main tomb on either side consisted of single rows of stones somewhat smaller and less imposing in character. The appearance of this small group suggested, that the centre tomb was, perhaps, that of some chieftain who had been buried with his wives or favourite children apart from his followers, in a quiet and specially selected spot. It was accordingly determined to open the centre and most imposing-looking tomb, which measured 58 feet in diameter and is the largest of the 54 barrows that form the main group at Junapani.

After digging through about 3 feet of thick, caked soil nearly as hard as stone, we came upon broken pieces of pottery in which mica was prevalent, and from amongst the fragments the iron implements, figured in

Plate IV, Nos. 9-14, were collected. The excavation had evidently been carried down to the rocky basis of the hill, and earth filled up over the remains. Though thickly encrusted with rust, some of which subsequently flaked off, the iron was in good preservation owing to the dryness of the soil in which it had been buried. The photographs shew the implements as they looked some six months after they were found, after they had undergone some rough handling. No traces of human remains were found. They had perhaps long since disappeared.

No. 9. Small pieces of rusty iron, possibly arrow-heads, &c. (?)

No. 10. Spear heads (?)

No. 11. Axes, small specimens of No. 5. In one specimen the bands are perfect. They are wanting in the other.

No. 12. A snaffle bit in excellent preservation. The form is quite that of the present day. But, after all, this is hardly very remarkable and cannot be held to militate against the antiquity of the remains. The dagger, the sword and the spear have not undergone any great change during many centuries, and the snaffle as the easiest bit for a horse's mouth would have suggested itself at an early date to a race of horsemen.

No. 13. A small brooch, or buckle, or ornament, resembling in shape a bow and arrow. It will be noticed that both this and the axes are in miniature. I cannot find the passage in Herodotus, but, if I am not mistaken, it is mentioned either by him or one of the old writers, that a custom prevailed among the Scythians or nomadic tribes of that class, of burying with their dead their weapons and horse-trappings, or the miniatures of their weapons.

No. 14. A pair of iron articles of exactly the same size and shape with loops at either end. At first it was thought they might be horse bits. It afterwards suggested itself that they must be stirrups. The sculpturings on the remains found in England are supposed by some, to be rough representations of the articles buried in the tumuli. Without pausing to enquire whether this view is correct, the somewhat singular resemblance between the remains, found in this barrow, and the sculptures on the wall of the Deo Cave, Fife, may be noticed (see Plate XXXIV, Fig. 3, Sir J. Simpson's Archaic Sculptures). The so-called "spectacle marks" may be the bit, and the form of the stirrups and spear-heads may be traced in Sir J. Simpson's sketch, without the exercise of any very great stretch of the imagination. To the view, that these are indeed the stirrups of the rider, the bit of whose horse and whose spear and other weapons were buried by his side, I still adhere, believing that the foot of the horseman was placed on the piece of iron, which formed the base of a triangle, the two sides being perhaps composed of thongs passed through the loops at either end. This view receives further confirmation from the extract of Professor Stephen's note to Frithiof's Saga, extracted in a later paragraph.

Although the excavation has been extended to the solid rock, neither on this nor on any other occasion has any chamber, similar to that of other parts of India, been found beneath the mounds of the Junapani barrows. This I believe is to be accounted for by the fact, that, in the vicinity of these remains, no material like sandstone, which can be easily split and used for the walls of chambers, is to be found. In the basaltic formation of the Nagpur district, trap-boulders are the only stones available, as the contractors who had to build the bridges on the Nagpore Branch of the G. I. P. Railway found to their cost. Although these boulders answer admirably for the boundaries of the circles, they are not equally well adapted to the interior chambers. Moreover, the trap rock is here close to the surface, and a cavity for a chamber, even if the stone necessary for its construction were at hand, could only be excavated with the greatest difficulty. Further West and South again, when we come on the sandstone formation, Kistvaens and Cromlechs of sandstone take the place of, or are found in connection with, the stone circles, suggesting the view, that the same class of people in different parts of the country built Kistvaens, where the easily worked sandstone was procurable, whilst, in the trap region, they contented themselves with the barrows, such as those found at Junapani.

In addition to the iron implements figured in Plate IV and described above, many other pieces of rusty iron, some of which have no character whatsoever, and the probable use of which it is not easy to conjecture, have been found in the tombs at Junapani, Takulghat, in the Godavary district and elsewhere. Sickles similar to those figured in Col. Meadows Taylor's paper, page 357, Vol. XXIV, of the Transactions of the Royal Irish Academy, and found by that Officer in the Dekhan, have been dug up by Col. Glasfurd and the late Rev. Stephen Hislop. The barrow opened by Mr. Carey, again, was found to contain bells, the counterpart of those which had been dug up by Col. Meadows Taylor in the same class of tomb, some hundreds of miles further South.

Similarity between these Tumuli and the Barrows of Europe.

The tumuli at Junapani and the remains found within the barrows having been described, the remarkable resemblance, borne by these tumuli and their contents to the sepulchral mounds and the remains common in other and distant parts of India and in other countries of the world, has to be noticed.

In the first place, the barrows and their contents near Nagpur are identical in nearly every single detail with those on the Godavery. In the southern parts of India, where trap boulders are not procurable, the tumuli, as noticed above, take the form of Kistvaens and Cromlechs, sometimes with and sometimes without the stone circles. The remains found within this class of tombs and the position of tombs indicate that they are the burying-

places of the same class of people, who for very good reasons had, in different parts of the country, to make use of different materials, on the same principle that an engineer adapts his class of work to the stone found in the locality in which he is engaged.

Col. Meadows Taylor, in his paper already alluded to, has placed side by side, in his sketch, barrows, examined by him near Alnwick in Northumberland, and the tumuli of the Dekhan of India, explored by him in 1851; and it will be seen that, in nearly every respect, these burial-places are counterparts of one another. What has been said regarding the Dekhan remains and those found in Great Britain, applies with equal force to the tumuli of Junapani and the European; and Mr. Kipling's drawing, from my sketch, of a barrow near Nagpur, given in Plate III, and one near Alnwick in Northumberland, figured by the late Col. Meadows Taylor in the paper already referred to, will show, most distinctly, the striking resemblance between the tombs in England and in India.

This interesting circumstance was noticed some years ago by Major-General Cunningham, C. S. I., C. I. E., of the Royal Engineers, who in the preface to his description of the Bhilsa Topes thus refers to it—

"To the Indian antiquary and historian, these discoveries will be, I am willing to think, of very high importance, while to the mere English reader they may not be uninteresting, as the massive mounds are surrounded by mysterious circles of stone pillars, recalling attention at every turn to the early earthworks or barrows, and the Druidical colonnades of Britain.

"In the Buddhistical worship of trees displayed in the Sanchi bas-reliefs, others, I hope, will see (as well as myself) the counterpart of the Druidical and adopted English reverence for the oak. In the horse-shoe temples of Ajanta and Sanchi many will recognise the form of the inner colonnade at Stonehenge. More, I suspect, will learn that there are Cromlechs in India as well as in Britain, that the Bráhmans, Buddhists and Druids all believed in the transmigration of the soul, and the Celtic language was undoubtedly derived from the Sanscrit &c."

The circumstance of the remarkable similarity in the shape of the tumuli being borne in the mind, the next point of resemblance is the position in which the barrows are found. Col. Meadows Taylor particularly notices, that, both in Europe and in India, these burying-places are situated on the southern slope of the hill, the sunny side in fact, and this circumstance has already been noticed in regard to the grouping of the Junapani barrows.

SIMILARITY BETWEEN THE REMAINS FOUND IN THE INDIAN BARROWS AND THE CONTENTS OF THE BARROWS IN EUROPE.

If these two points have been established, then the third point of resemblance is in the remains buried in the tombs. Passing from the pot-

tery urns to the metal articles found within the barrows, it is to be noticed, that, both in England and in India, the arms and ornaments of the deceased were buried with him. Further, if the list of weapons given above, sketches of some of which accompany this paper (Pl. IV), be examined, it will be seen, that to nearly every single implement or ornament, found in India, an exact counterpart can be traced among the specimens dug out of similar tumuli in Ireland, which are now in the Museum of the Royal Irish Academy in Dublin.

As further evidence on this point and in support of the view expressed in an earlier paragraph that we had indeed the good fortune at Junapani to come upon the remains of some chieftain who had been buried centuries ago with his arms and horse-trappings, I would refer to the account in Bishop Tegnier's Frithiof's Saga of the ceremonies of the burial of king Ring, and of the barrow in which the body of the old king was laid, together with his charger and his arms. Professor Stephens of Copenhagen, whose translation of the poem is well known, was good enough to send me a copy of his work some years ago when he heard of our success at the Junapani barrows. And in the note to the word "barrow," which accompanies the text, is the following description of a tumulus and its contents discovered by Russian officers in the steppes of Tartary. This description, so exact is the resemblance in detail, might have been written of the opening of the Junapani barrow, with the exception that, there being no stone other than trap rock available within many miles of Nagpur, the Junapani tumulus contained no stone vault.

"Barrow (perhaps derived from Berg, hill), grave, mound, sepulchral heap, was a vast mass of earth and stones raised over the remains of a chief or warrior of renown. Commonly one or more timbered or walled chambers protected the corpse from contact with the soil itself. Such barrows or cairns are found in Scandinavia and in the British Isles, Poland and Russia, especially in the steppes of Tartary. The borderers upon these deserts (near Tromsky) have for many years continued to dig for treasure deposited in these tumuli, and the Russian Court, being informed of these depredations, despatched an officer to open such of the tumuli as were too large for the marauding parties to undertake. He selected the barrow of largest dimensions, and a deep covering of earth and stones having been removed, the workman came to vaults. The centre and largest, containing the bones of the chief, was easily distinguished by the sword, spear, bow, quiver and arrow, which lay beside him. In the vault beyond him, toward which his feet lay, were his horse and bridle and stirrups."

The implements figured in Plate IV have been made over by me to Mr. Franks, F. R. S., F. S. A., of the British Museum.

We have then three very striking points of resemblance. In both countries the class of tumuli is the same; the barrows are always placed

on the same side of the hill, *i. e.*, on the southern slope ; and the remains found within these tumuli are almost identical in character.

SIMILARITY BETWEEN THE MARKS FOUND ON THE STONES AND THE "CUP MARKS" OF THE BARROWS IN EUROPE.

There is yet a fourth and most remarkable circumstance which goes far to establish the identity of the remains found in Central India with the well-known prehistoric tumuli of Europe. This is the form of the "cup-marks" on the stones surrounding the tumuli, the existence of which on the Indian remains I was fortunate enough to be the first to discover. These cup-marks on the Junapani tumuli and similar markings in the Kumaon hills have already been noticed in my paper in the Rock markings in Kumaon (see the Journal of the Society for January 1877), but the subject requires a brief notice in this place also.

On the stone circles of England and Scotland are found a variety of "Archaic Sculpturings" of various types. The most common of these are the cup-marks which are thus described by Sir James Simpson at page 2 of his work.

"First type, single cups. The simplest type of these ancient stone and rock cuttings consists of incised, hollowed out depressions or cups, varying from an inch to three inches and more in diameter. For the most part these cup-cuttings are shallow, consequently their depth is usually far less than their diameter ; it is often not more than half an inch, and rarely exceeds an inch or an inch and a half. On the same stone or each surface they are commonly carved out of many different sizes. These cup excavations are, on the whole, usually more smooth and polished over their cut surfaces than the ring cuttings are. Sometimes they form the only sculpturings on the stone or rock, as on many Scottish monoliths, but more frequently they are found mixed up and intermingled with ring cuttings. Among the sculptured rock surfaces, for instance, in Argyleshire, there are in one group at Auchuabreach thirty-nine or forty cup cuttings, and the same number of ring cuttings, and at Camber there are twenty-nine figures, namely, nine single cups, seven cups surrounded by single rings, and thirteen cups encircled by a series of concentric rings."

Now, although I had paid several visits to the barrows of Junapani and the neighbourhood and had noticed on the boulders small holes placed in lines, I had paid no particular attention to their existence. From their regularity and arrangement and general position on the top of the stones (Pl. V, fig. 1, 2, 3), I was led to suppose that they were perhaps the work of the cowherds, who grazed their cattle in the neighbourhood, and that they were, perhaps, used for some game similar to that which commended the tri-junction boundary marks of the village lands to the attention of the village children, who, when I was in the Settlement Department, used

to be continually causing damage to our boundary platforms. Subsequent examination shewed these marks on the sides of the boulders also (Pl. V, fig. 4), suggesting that they could not be used for the game in question. About the same time I was fortunate enough to receive Sir James Simpson's book, above alluded to, which established, without doubt, the exact similarity between the marks on the Indian barrows and on the monolithic remains which have been examined and described in England.

Two classes of "cup-marks" the one large, the other small, have been found, similar to those in the English barrows. But as yet I have not traced on the barrows any of the concentric circles noticed by Sir James Simpson.* They may, however, be yet brought to light together with perhaps other and more striking particulars, linking these tumuli still more closely to the remains found at home. On Plate II, Fig. 1, a sketch taken from Sir J. Simpson's book of a tumulus with the "cup-marks" on one of the stones is given, and on Plate V will be found a sketch of a stone at Junapani with the markings as I saw them some years ago. It will be seen, that, with the exception of the stone chamber, the absence of which in the Nagpur tombs has already been accounted for, there would be no difficulty in mistaking the picture for a sketch of one of the Junapani barrows. The "cup-markings" are all shallow, the depth of the cup being about $\frac{1}{4}$ of an inch at the most, age probably having told on the carvings.

In the present paper, I will not stop to discuss at any length the significance of these marks. The chief point I am anxious here to establish is their resemblance to the markings found in the same class of tumuli at home. It may, however, be noticed that the view generally adopted at home is, that the "cup marks" are a rough sort of ornamentation, and that they have no signification whatsoever. Without venturing an opinion regarding the object which the constructors of the barrows had in carving these marks on the stones, I would repeat what I have said in my paper on the Kumaon markings, that the arrangement of the cups is peculiar and would seem to indicate some design beyond mere ornamentation. On no two stones are the marks similar. The combination of large and small cups is striking (Pl. V, fig. 4). The permutations of the cups on the stones already examined are very numerous.† The manner too, in which the large cups are introduced, would seem to suggest that the combinations of marks may have some meaning, which may, perhaps, yet be discovered and explained. Those who are acquainted with the system of printing by the electric telegraph, and the combination of long and short strokes in Morse

* These have been found by me on the Kumaon Rocks. See Bengal Asiatic Society's Journal, January, 1877.

† These are shewn in the paper on the Kumaon markings. See Journal B. A. S., January, 1877.

Code, and the recent arrangements for communicating signals to troops at night, by short and long flashes of lamps, specially adapted to the purpose, and by day by the sun-telegraph, will perhaps agree, that it is not altogether impossible, that these marks may have some, as yet hidden, signification. The Agham writing consists, I understand, of a combination of long and short strokes. This writing is found chiefly on sandstone, on which it would not be difficult to cut out long strokes with a chisel. On hard trap, however, it would be found much easier to make "cup-marks," by working a chisel round and round, than to cut strokes; and is it impossible, that, perhaps, on the trap boulders, the "cups," large and small, took the place of the long and short strokes of the sandstone lettering, in the same way that the barrows took the place of Cromlechs in the localities in which sandstone was not procurable? Or that, if this theory is untenable, the marks denote the age of the deceased or the number of his children, or the number of the enemies slain by the warrior, whose remains are buried in the tomb encircled by the stone?

Whatever conclusion may be arrived at regarding the possible correctness of any of the above suggestions, I think it will be generally admitted, that the four points of resemblance noticed above as existing between the remains found in this country and in Europe are of more than common interest.

The sketches will shew that (I) the shape of the tumuli in India and in Europe is the same.

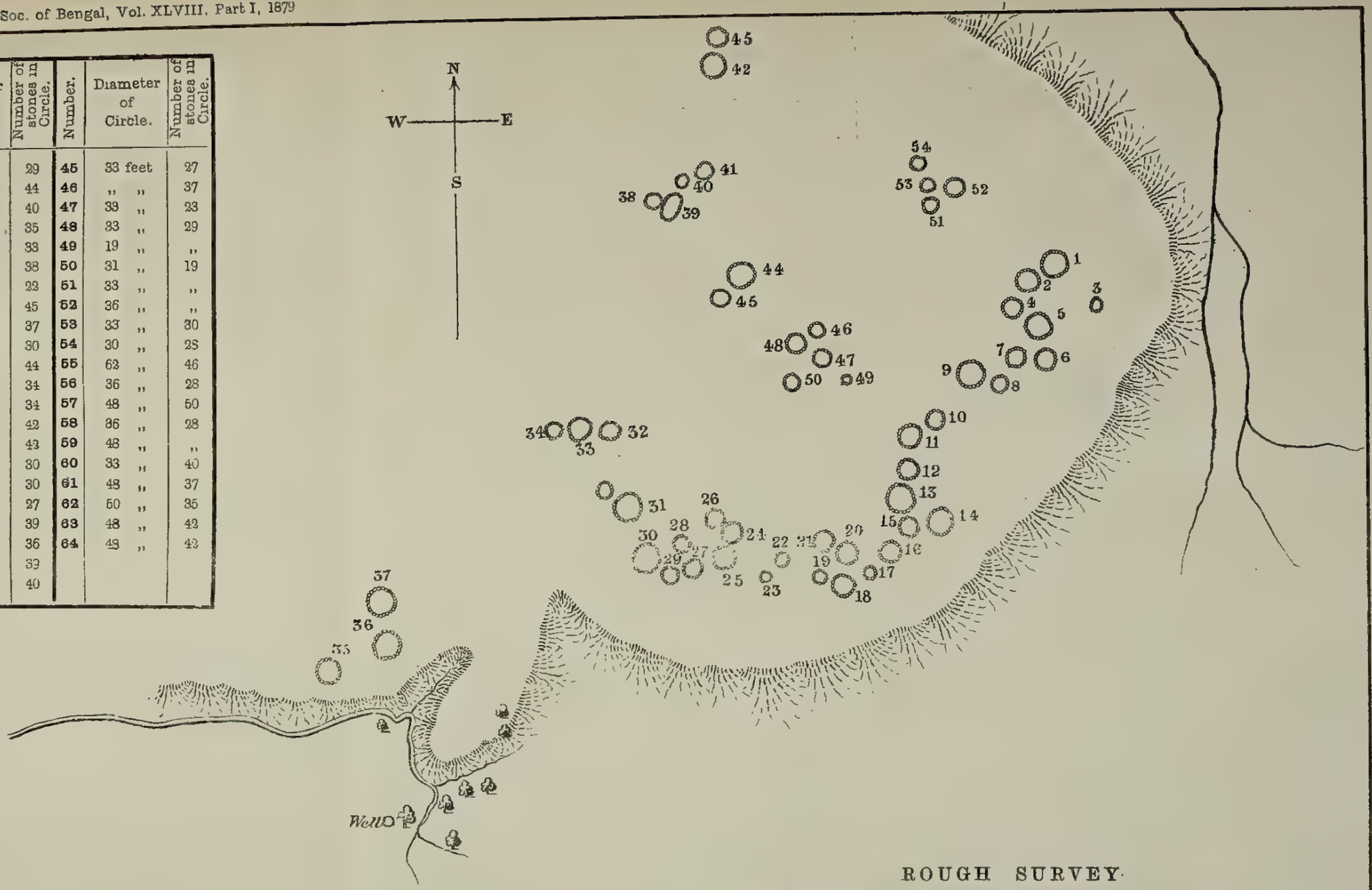
(II) The barrows in India and in Europe always face towards the south.

(III) The remains found in the Indian barrows resemble almost exactly the remains dug out of similar burial-places in Europe.

(IV) The cup-marks on the boulders which surround the Indian tombs are identical with the marks found on the stones placed around the same class of tumuli in Europe.

The inferences to be drawn from these points will be noticed in a later paper.

Number.	Diameter of Circle.	Number of stones in Circle.	Number.	Diameter of Circle.	Number of stones in Circle.	Number.	Diameter of Circle.	Number of stones in Circle.
1	44 feet	31	23	25 feet	29	45	33 feet	27
2	55 ,,	50	24	37 ,,	44	46	,, ,,	37
3	20 ,,	,,	25	45 ,,	40	47	33 ,,	23
4	36 ,,	,,	26	31 ,,	35	48	33 ,,	29
5	46 ,,	32	27	37 ,,	33	49	19 ,,	,,
6	43 ,,	32	28	38 ,,	38	50	31 ,,	19
7	40 ,,	48	29	37 ,,	22	51	33 ,,	,,
8	36 ,,	32	30	50 ,,	45	52	36 ,,	,,
9	55 ,,	,,	31	50 ,,	37	53	33 ,,	30
10	40 ,,	47	32	35 ,,	30	54	30 ,,	28
11	49 ,,	36	33	50 ,,	44	55	62 ,,	46
12	44 ,,	25	34	33 ,,	34	56	36 ,,	28
13	53 ,,	17	35	43 ,,	34	57	48 ,,	50
14	44 ,,	34	36	56 ,,	42	58	36 ,,	28
15	43 ,,	30	37	55 ,,	43	59	48 ,,	,,
16	44 ,,	44	38	33 ,,	30	60	33 ,,	40
17	28 ,,	,,	39	53 ,,	30	61	48 ,,	37
18	40 ,,	34	40	21 ,,	27	62	50 ,,	35
19	30 ,,	32	41	43 ,,	39	63	48 ,,	42
20	50 ,,	34	42	43 ,,	36	64	43 ,,	43
21	[illegible] ,,	29	43	20 ,,	39			
22	[illegible] ,,	34	44	52 ,,	40			



ROUGH SURVEY
OF
BARROWS NEAR JUNAPANI
IN THE
NAGPUR DISTRICT
OF THE
CENTRAL PROVINCES of INDIA

Examined by H. RIVETT-CARNAC.

Scale 1 Inch = 300 Feet.

0 60 120 180 240 300 600 *Feet*

Zincographed at the Surveyor General's Office Calcutta



Fig. 1.

Fig. 2.



Zincographed at the Surveyor General's Office Calcutta.

BARROWS AND CUP MARKS IN EUROPE.

To shew the similarity between the European and Indian Types.

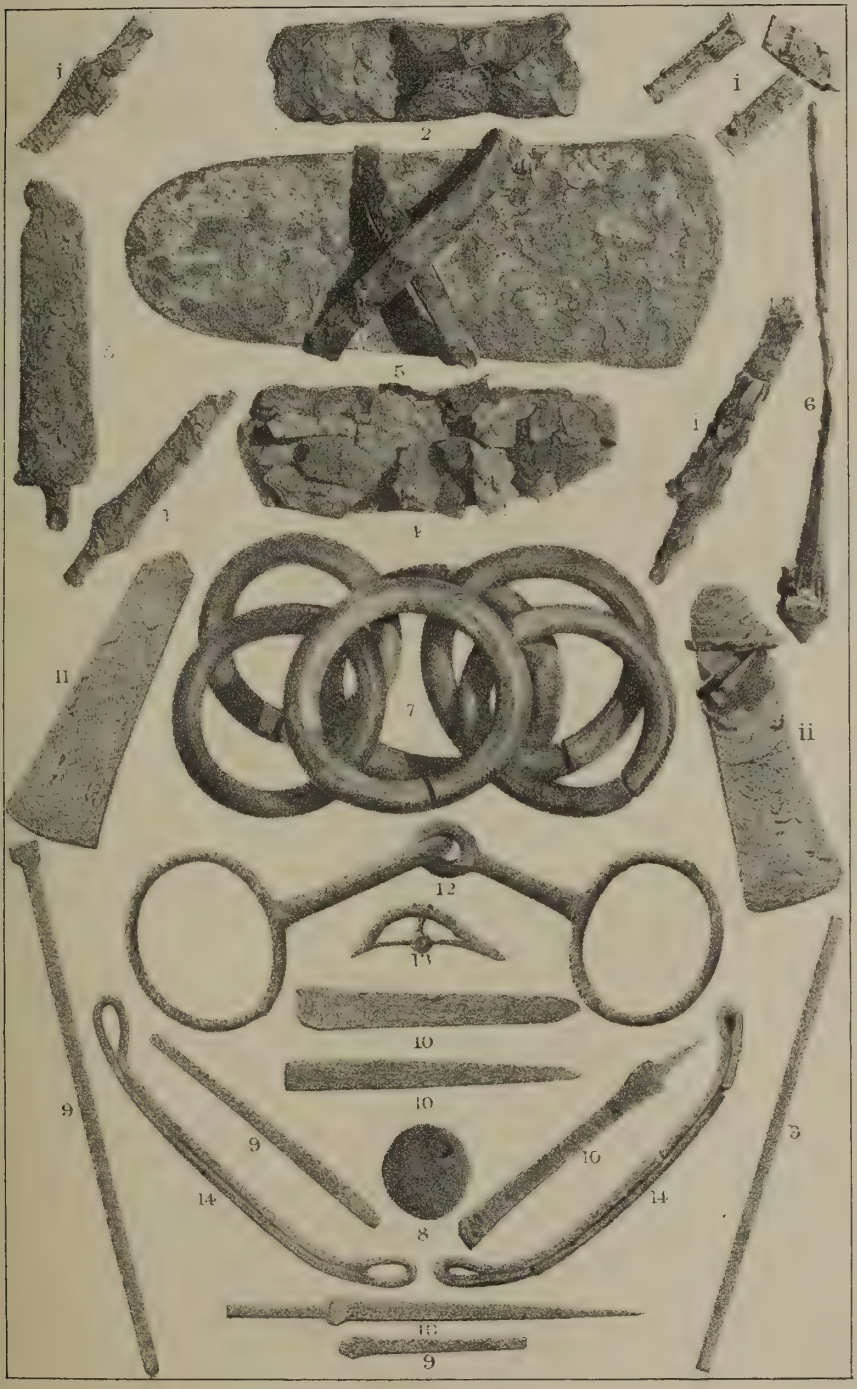
(From Sir J. Simpson's "Archaic Sculpturings.")



H. Rivett-Carnac, del. Zincographed at the Surveyor General's Office Calcutta.

REMAINS OF BARROWS NEAR NAGPUR, INDIA.

(The barrow in the foreground has been opened. The mound of the further barrow is untouched.)

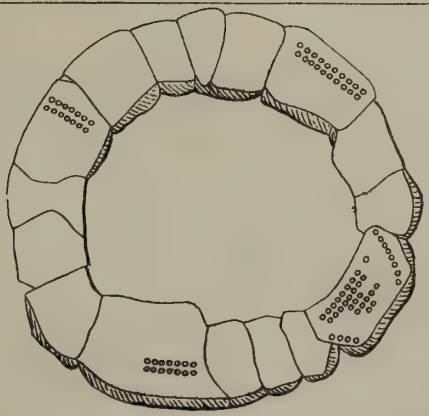


IRON IMPLEMENTS FOUND IN THE JUNAPANI BARROWS.

(From Photographs.)

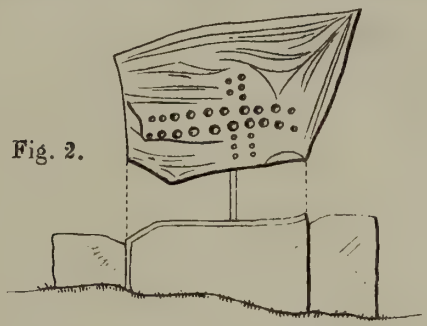
Lithographed at the Surveyor General's Office, Calcutta, July 1879.

Fig. 1.



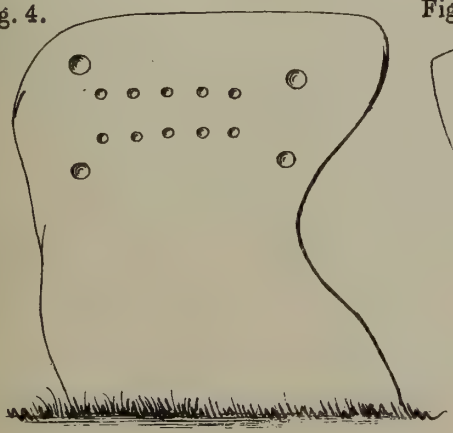
Rough Plan to show arrangement of boulders cup-marked on top.

Fig. 2.



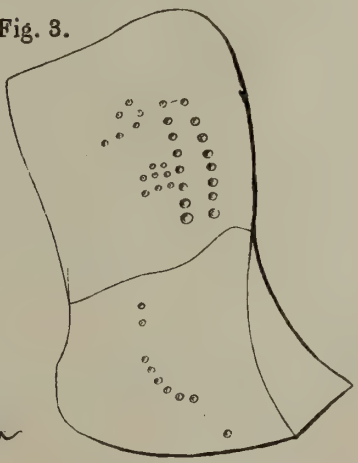
Boulder showing cup-marks on top

Fig. 4.



Boulder with cup-marks on side.

Fig. 3.



Boulder cup-marked on top.

H. Rivett-Carnac, del. Zincographed at the Surveyor General's Office Calcutta.

CUP-MARKED BOULDERS.

Scale of Figures 2, 3, & 4, ½ Inch = 1 Foot.

The Snake Symbol in India, especially in connection with the worship of Śiva.—*By* J. H. Rivett-Carnac, Esq., c. i. e., f. s. a., m. r. a. s., &c.

In his work on "Tree and Serpent Worship" Mr. Fergusson has urged the desirability of workers in the rich field of Indian Antiquarian research collecting information regarding the worship of the snake, which is known to prevail in various forms in many parts of India.

The accompanying instalment of rough jottings and sketches, made at various times, has been worked up by me into the present imperfect shape during the Christmas holidays. It is now submitted to the Society in the hope that this paper, although doubtless full of faults, may at least induce discussion, and thereby assist in placing me on the right track, and in awakening further interest in this important subject amongst those who have better opportunity than I have of following it up.

The snake as a personal ornament, or as a canopy surmounting the figure, is not, of course, confined to representations of Śiva, and in the collection of the deities of the Hindu Pantheon that I have been able to make, the five-headed snake (Nág panchamukhi) is to be seen overshadowing Vishnu, Garuḍa and others. The Sesha or Ananta in the pictures of Vishnu is well known. Still, as Moor says at p. 36 of his Hindu Pantheon, "As emblems of immortality, serpents are common ornaments with many deities. But Mahádeo seems most abundantly bedecked with them; bound in his hair, round his neck, wrist, waist, arms and legs, as well as for rings, snakes are his constant attendants."

The serpent appears on the prehistoric cromlechs and menhirs of Europe, on which, as stated in my paper on the Kamáoṇ Rock-carvings published in the Society's Journal for January 1877, I believe, the remains of phallic worship may also be traced. What little attention I have been able to give to the serpent-symbol, has been chiefly in its connection with the worship of Mahádeo or Śiva, with a view to ascertain whether the worship of the snake and that of Mahádeo or the phallus may be considered identical, and whether the presence of the serpent on the prehistoric remains of Europe can be shewn to support my theory that the markings on the cromlechs and menhirs are indeed the traces of this form of worship, carried to Europe from the East by the tribes whose remains are buried beneath the tumuli.

During my visits to Benares, the chief centre of Siva worship in India, I have always carefully searched for the presence of the snake-symbol. On the most ordinary class of "Mahádeo," a rough stone placed on end supposed to represent the phallus, the serpent is not generally seen.

But in the temples and in the better class of shrines which abound in the city and the neighbourhood, the snake is generally found encircling the phallus in the manner shewn in Plate VI, fig. 8.

The tail of the snake is sometimes carried down the *yoni*, and in one case I found two snakes on a shrine in the manner figured in Plate VI, fig. 5, 6.

In the Benares bazar I once came across a splendid metal cobra, the head erect and hood expanded, so made as to be placed around and above a stone or metal "Mahádeo." It is now in England. The attitude of the cobra when excited and the expansion of the head will suggest the reason for this snake representing Mahádeo and the phallus.

In several instances in Benares, I have found the Nág surrounding and surmounting the hump of the "Nandi" or Ṣiva's Bull. In such cases the hump is apparently recognised as a Mahádeo, as the remains of flowers, libations and other offerings were found thereon.

I hardly venture to suggest that the existence of the hump is the reason for the Nandi being selected as the *Vahan* or "vehicle" of Ṣiva. But the circumstance may be worth noticing. I am of course aware that the Bull is a symbol of generation and reproduction, traceable to its position in the Zodiac at the Vernal Equinox. But it may have been recognised as Ṣiva's Vahan, long before the honor was assigned to it of introducing it into the Equinox. And its position with regard to Ṣiva may have secured for it this important place in the signs of the Zodiac.

The snake in conjunction with Mahádeo is further to be traced in several of the metal specimens of the collection now forwarded for the inspection of the Society. In two small shrines, containing "Gaṇas" or assemblages of deities, of which the Mahádeo or Linga is the centre, the Nág or cobra can be seen to hold the chief position at the back of the shrine. In a remarkable bracelet purchased in Benares, consisting of a mass of Mahádeos and yonis, many of which are arranged in circles like cromlechs, the serpent can be traced encircling the phallus. It is again to be seen forming the handle of a spoon and surmounting the figure of Ganesha, Ṣiva's son, wherewith holy Ganges-water is taken from the cup, and sprinkled over the Mahádeo by pilgrims and worshippers at the shrines of Benares and other Siva temples. It is seen again in the sacrificial lamp, used in the same worship. In the centre of the lamp is a space for a small "Mahádeo," an agate in the shape of an egg, brought, it is said, from Banda and the hilly country of the Nerbudda, rich in these pebbles, which are imported annually in large quantities into Benares. And the snake-canopy can be recognised again forming the back-ground of the shrine of the figure of *Anna-Purna Devi*, a form of Ṣiva's ṣakti Parvati. The snake is present

again in a specimen where Ṣiva's Bull or Nandi supports the Lotus, representing the female or watery principle, and within which is enclosed an agate egg (the jewel of the lotus ?), representing Mahádeo or the male principle. Above this is a small pierced vessel which should contain Ganges water, to trickle through the aperture and keep anointed the sacred stone placed beneath it. The vessel or *loṭa* is supported by a Nág or cobra, the head erect, the hood expanded, forming the conventional canopy of the shrines of Siva.

The serpent with the tree is to be seen on the canopies of shrines. In one case the shrine with a cobra-canopy has the Linga and yoni or Mahádeo complete.

Most of the other canopies, as I will call these backs of shrines, were purchased as old brass or old copper, and the deities belonging to them had perhaps long since been broken up and melted down. In some of them the tree, with the serpent twisted round the trunk, is very distinct. One of them has been figured by me in the annexed sketch, Plate VII, fig. 3. I was hardly prepared to find the tree and the serpent together in this form, in a shrine apparently used comparatively recently, if not in the present day, and I hope for some explanation of these interesting symbols from Dr. Rájendralála Mitra, or some other authority.*

The Bell, sent with the collection on which a hooded snake overshadows the figures of Garuḍa and Hanumán, seems, from these figures, to be adaptable for use at a shrine of either Vishnu or Ṣiva. Lastly, the brass models represent the cobra with head erect and hood expanded, the design somewhat elaborated and ornamented. Although, in one of them at least, there is no space for the Mahádeo, these Nágs are, I am assured, considered symbolical of life or generation, and as such are worshipped as Ṣiva or Mahádeo or the Linga or Phallus or whatever it may be called.

All these specimens were picked up in the metal bazar in Benares, where the fashionable trays, "specimen-vases," and much Philistine work are now made and exposed for sale. In most cases the specimens were raked out with difficulty from among sacks containing old metal, collected to be broken up and melted down for the manufacture of the brass-ware now in vogue.

Although the presence of the snake in these models cannot be said to prove much, and although from the easy adaptibility of its form, the snake must always have been a favourite subject in ornament, still it will be seen that the serpent is prominent in connection with the conventional shape under which Mahádeo is worshipped at Benares and elsewhere, that it sometimes even takes the place of the Linga, and that it is to be found entwined with almost every article connected with this worship.

* See Appendix, p. 31.

It might be expected that the Nág or Cobra would be seen at its best in the carvings or idols of Nágeshwar, the Cobra or Snake Temple of Benares. But in this I was disappointed ; Nágeshwar, as I saw it, consisted of two temples, or an inner and outer shrine, the one called Sideshwar, the other Nágeshwar. In the outer or Nágeshwar shrine was a large sized stone Mahádeo, of ordinary construction without the snake on it or round it. The old woman in charge of the temple, the priest being absent, assured me that a snake had once surmounted the Mahádeo, but that the symbol had been worn away by much veneration. The story was most probably manufactured for the occasion in consequence of my manifest disappointment at the absence of the Nág.

A Bull or Nandi and a Cobra faced the Mahádeo. The contents of the inner temple were peculiar. The Mahádeo consists of a broad black stone in shape something like a tumulus. It is sunk some little depth below the ground, and is surrounded by four stone slabs forming a small square tank. There was no yoni with this Mahádeo, the tank perhaps representing the yoni. On the top of the Mahádeo had been traced, with some sort of white pigment, a circle with a central dot or cup mark, exactly similar in shape to the circles with centres noticed in my paper on the Kumáoṇ Rock-markings. These marks are common enough at Benares, and are to be seen painted on the bamboo umbrellas which line the ghats and are also dabbed about freely on the walls of buildings. Further enquiry has confirmed the opinion expressed by me and supported by Mr. Campbell of Islay in my paper on Kumáoṇ rock markings, that, whatever it may have meant in Europe, in India the sign ⊙ means Mahádeo. There seems to be little doubt that at Nágeshwar the snake god is Mahádeo himself, or that he is worshipped under that name, and that Nágeshwar is a temple of Siva or Mahádeo in the form of a Nág or cobra.

These same marks were to be seen on a Mahádeo in a small shrine under a tree close by. In front of Nágeshwar were the graves of the Gosains of the temple. They resemble the graves of Chandeshwar in Kumáoṇ, noticed in my paper on the Kumáoṇ Rock Markings. The Kumáoṇ graves were evidently the graves of Gosains of the Ṣiva sect who I have since learnt are always buried, not burnt.* At Benares, as at Chandeshwar,

* *Vide* Tod's Rajasthan, Vol. I, p. 445. "The priests of Eklinga are termed "*Gosain* or *Goswami* which signifies control over the senses. The distinguishing mark "of the faith of Siva is the crescent on the forehead. They bury their dead in a sit- "ting posture, and erect cairns over them which are generally conical in form. I "have seen a cemetery of these, each of very small dimensions, which may be described

a platform had been raised above the grave, on the top of which were placed a Mahádeo and yoni. A representation of Siva's Trident and the soles of two feet, not unlike those figured in Fergusson's Eastern Architecture, were also noticed on the grave.

Our cicerone informed us that the feet were represented here in order that pilgrims might fall down and worship at the feet of the Gosain, who, dying, had become a saint and deserving of worship.

A visit in search of the snake symbol to the Nág Kuan, or serpent well, was rewarded with better success. The well itself is described by the Rev. Mr. Sherring in his "Sacred City of the Hindus," from which I may be permitted to quote the following passage:

"The Nág Kúan or serpent's well is situated in a ward of the city called after the name of the well Nág Kúan Mahalla, which adjoins the Ausán Gang Mahalla. This well bears marks of considerable antiquity; and from the circumstance of an extensive district of Benares being designated by its name, there is no doubt that it must be regarded as one of the oldest historical places the present city possesses. The construction of this well was, probably, nearly, if not quite coeval with the building of the Mahalla or ward itself, which, we may imagine, was described as that part of the city containing the well—the well being the most important and noticeable object there: and, so gradually, the inhabitants associated the Mahalla with the well, and called them by the same name. The ward is in the north-western part of the city, at some distance from the Ganges. The quarter lying to the east of this ward, that is, between it and the Ganges, is, as I have already remarked, in all likelihood, the oldest portion of the present city; and, therefore, the Nág-Kúan ward would have been originally in its suburbs. It is even possible that one of the first places built in these suburbs, and frequented by the people, was this well, and that its existence was one of the reasons, perhaps the chief, for the settling of a population in its neighbourhood. No person in Benares can tell when the well was made; but there is a reference to its existence in the Kasi-Khanda.

"Steep stone stairs, in the form of a square, lead down to the well; and a broad wall of good masonry, six or seven feet thick, surrounds them at their summit, rising to the height of four or five feet above the ground. Each of the four series of stairs has an entrance of its own. Their junction below forms a small square, in the centre of which is the well. De-

"as so many concentric rings of earth diminishing to the apex crowned with a "cylindrical stone pillar."

Now may not the circular tomb have represented the womb or yoni of mother earth, the corpse, which is to be born again to a new life, being placed in the position as in the mother's womb?

scending twelve stone steps you reach the water which is stagnant and foul. Beneath the water is a sheet of iron, which constitutes the door leading to a still lower well, which perhaps may be the old well in its original state. The stairs, I suspect, are not of great date. On the inside of those to the east is an inscription, to the effect that, in 1825 Samvat, or nearly one hundred years ago, a Rájá extensively repaired the well. It is possible he may have built the stairs then. Many of the slabs of stone of which they are composed display carvings on their external surface, some of which bear unmistakeable marks of considerable antiquity. These slabs were doubtless taken from dilapidated buildings in the neighbourhood. A thorough examination of them, especially of the more ancient among them, would, I am satisfied, be not unproductive of interesting results. The wall was also repaired by Mr. Prinsep about thirty years ago.

"At this well the Nág or serpent is worshipped. In a niche in the wall of one of the stairs is a figure representing three serpents; and, on the floor, is an emblem of Mahádeo in stone, with a snake crawling up it. The well is visited, for religious purposes, only once in the year, namely, on the 24th and 25th days of the month Sawan, when immense numbers of persons come to it, on pilgrimage, from all parts of the city. The women come on the first day, and the men on the second. They offer sacrifices both to the well and to Nágeshwar, or the serpent-god". *(Sherring's Sacred City of the Hindus.)*

The well does not seem to attract much attention during most months of the year. I have often passed it and seen but few people there. In the dry season, there is little or no water in it. But the "Nág Punchami"—is a gala day at the well, and I believe at most Siva temples. The Mahádeo from the neighbouring temple of "Nágeshwar" is brought to the third step of the stairs on the west side of the tank surmounting the well, and Hindus of all classes come in thousands to adore the Mahádeo and bathe in the well, which, as the "Nág Punchami" Fair is held in July, or during the rains, is filled with water at this season. On the fourth step of the stairs above mentioned, are six circular holes, each $4\frac{1}{2}$ inches in diameter and about 4 inches deep arranged in a row. Being always on the look out for "cup marks," I immediately noticed these holes, but the Bráhman in attendance explained that they were intended to collect the libations poured over the Mahádeo, and which trickled down from the gutter above. The same idea, Dr. Keller informed me at Zurich, exists in Switzerland, regarding these cup marks. And from a paper, recently received from the Society of Antiquaries of France, I learn that cup marks are frequently found on stones and slabs in the founda-

tions and walls of old churches in the north of Europe. To the right of the spot where the Mahádeo is placed, three stone slabs or panels, apparently of great age, have been let into the wall. On one of these, two cobras standing on their tails (see Plate VI, fig. 7) have been roughly carved. On the next are two cobras intertwined in the attitude mentioned by Mr. Fergusson in the Appendix to his work on "Tree and Serpent worship." The cobras are somewhat battered, but the spectacle marks on one is still traceable (see Plate VI, fig. 4). The third slab contains a head, also much battered and weather-worn, which has been at one time surmounted by an ornament of some kind, possibly a cobra, but the form of which is no longer distinguishable. The heads of the twin cobras and of the human figure are all freely daubed with red paint, shewing their sacredness in the eyes of the Hindu visitors. The slabs appear to be very old and to have been collected from the ruins of some old temple.

To the left and some steps lower down, is a niche or shrine containing an ordinary Mahádeo and yoni with cobra twined round it as shewn in the sketch (Plate VI, fig. 8).

Behind on a tablet or panel, let into the wall, is the head of a cobra, roughly carved, and of the same character and style as the cobras above noticed. On a smaller panel to the right, two snakes are again represented intertwined, but shewing one twist less than in the pair previously noticed. Below the panel are the rough marks as shewn in the sketch (Plate VI, fig. 2) which may be either the remains of a rough inscription or perhaps of chisel or mason's marks. In two other places also was the twin snake symbol found. In the one case, the snakes are intertwined with apparently an egg between the two heads (Plate VI, fig. 3). In the other, the snakes are not intertwined and the egg appears to have been broken (Plate VI, fig. 7). These tablets or slabs appear to be of great antiquity. There seemed to be little doubt here, that the snakes were worshipped at the "Nág Kuán" as representing Mahádeo, and the act of congress, in which the snakes are represented as engaged, suggests the connection of these symbols with Siva worship.

Whilst on the subject of the snake well or tank, I would notice that snake wells are frequently found attached to temples of Mahádeo. I saw such a well recently in Kumáon close to the temple of Mahádeo, below the monoliths worshipped as representing Mahádeo, on the road between Almorah and Dévi Dhoora. A snake was supposed to inhabit the tank or well. I venture to throw out the suggestion, that the snake in the well may represent the post, or Mahádeo, in the tank, the well representing the yoni or tank as explained by Moor in his "Hindu Pantheon." The mysterious snake inhabiting the well is, of course, not confined to India; and

Schwalbach, and other snake wells in Europe will suggest themselves to many.

Later I visited the Benares Palace of the Rajahs of Nágpúr situated on the Ganges and built in the palmy days of the Bhonslahs, and when a visit to Benares was frequently undertaken by some of the family or its chief dependents. In a shrine within the buildings, I found the Mahádeo represented by a cobra or Nág, the coils of which were so elaborately intertwined as to make an accurate sketch of the arrangement a matter of no small difficulty. Here the Nág is certainly worshipped as a Mahádeo or phallus. The much intertwined Nág is shewn in Plate VII, fig. 1.

The Palace of the Bhonslahs at Benares brings me to Nágpúr, where, many years ago, I commenced to make, with but small success, some rough notes on serpent worship. Looking up some old sketches, I find that the Mahádeo in the oldest temples at Nágpúr is surmounted by the Nág as at Benares. And in the old temple near the palace of Nágpúr, or city of the Nág or cobra, is a five-headed snake elaborately coiled as shewn in Fig. 2, Plate VII. The Bhonslahs apparently took the many-coiled Nág with them to Benares. A similar representation of the Nág is found in the temple near the Itwarah gate at Nágpúr. Here again the Nág or cobra is certainly worshipped as Mahádeo or the phallus, and as already noticed, there are certain obvious points connected with the position assumed by the cobra when excited, and the expansion of the hood, which suggest the reason for this snake, in particular, being adopted as a representation of the phallus and an emblem of Siva.

The worship of the snake is very common in the old Nágpúr Province where, especially among the lower class, the votaries of Siva or *Nág bhushan*, "he who wears snakes as his ornaments," are numerous. It is likely enough that the City took its name from the Nág temple, still to be seen there, and that the river Nág perhaps took its name from the city or temple, and not the city from the river, as some think. Certain it is that many of the Kunbi or cultivating class worship the snake, and the snake only, and that this worship is something more than the ordinary superstitious awe, with which all Hindus regard the snake. I find from my notes that one Kunbi whom I questioned in old days, when I was a Settlement Officer in Camp in the Nágpúr Division, stated that he worshipped the Nág and nothing else; that he worshipped clay images of the snake, and when he could afford to pay snake-catchers for a look at a live one, he worshipped the living snake; that if he saw a Nág on the road, he would worship it, and that he believed no Hindu would kill a Nág or cobra, if he knew it were a Nág. He then gave me the following list of articles he would use in wor-

shipping the snake, when he could afford it; and I take it, the list is similar to what would be used in ordinary Śiva worship.

1. Water.
2. *Gandh*, pigment of sandalwood for the forehead or body.
3. Cleaned rice.
4. Flowers.
5. Leaves of the Bail Tree.
6. Milk.
7. Curds.
8. A thread or piece of cloth.
9. Red powder.
10. Saffron.
11. *Abîr*, a powder composed of fragrant substances (?)
12. Garlands of flowers.
13. *Buttemah* or gram soaked and parched.
14. *Jowarri* (*holcus sorghum*) do.
15. Five lights.
16. Sweetmeats.
17. Betel leaves.
18. Cocoanut, or nut.
19. A sum of money (according to means).
20. Flowers offered by the suppliant, the palms of the hands being joined.

All these articles, my informant assured me, were offered to the snake in regular succession, one after the other, the worshipper repeating the while certain *mantras* or incantations. Having offered all these gifts, the worshipper prostrates himself before the snake, and begging for pardon if he has ever offended against him, craves that the snake will continue his favour upon him and protect him from every danger.

The Deshpandia or chief Pandia (Putwari) of the parganah, who was in attendance with the Settlement Camp, also got for me the following *mantra* or verse to be used in the antidote for a snake-bite or to charm snakes.

श्री

सर्पमंत्र ।

तहकीकतुर्या चरणी बीर दंडाललेाहालेा खंड खंड उखपर अहेा धनाची ज्ञानी गर्वकरा लभनी हाती सर्पधराल अम्ही तहकीका बऊलरंगाले बऊनशिंगाले लऊताचा गर्वले फड़ना औट कोट नागासीवेा भागसामालडंखजागधरकर पाल त्याटभरी ॥ १ ॥

The village where I was encamped was rich in Tandáhs, mat-enclosures of betel leaf cultivation. The Barís who cultivate the betel-creeper or *Nágballi* or Cobra-creeper, as it is called, are, from their constant contact with the Nag-creeper, supposed to be on terms of friendship and to have influence with the snakes, and are often invoked to assist in curing persons who have offended, and who have consequently been bitten by the snake *deota* or deity. Besides the *mantra* given above, a remedy employed by the Barís is, I was told, to slap on the mouth the person who brings the news of the accident! These Barís are generally snake-worshippers, and as snakes are often found in the cool, well-watered and covered enclosures, in which the delicate creeper is grown, this desire to keep on good terms with the deity may readily be understood. I find too that I noted at the same time that those who worshipped snakes also worshipped the ant-hills or mounds of earth thrown up by ants. The holes of these ant-hills are held, correctly or incorrectly I cannot say, to be full of snakes. I should like further information on this point and would enquire whether the worship of ant-hills may not be on account of their pyramidical shape and hence connection with Ṣiva worship?

The "Nág panchami" or 5th day of the moon in Sawan is a great fête in the city of Nágpúr, and more than usual license is indulged in on that day. Rough pictures of snakes, in all sorts of shapes and positions, are sold and distributed, something after the manner of Valentines. I cannot find any copies of these queer sketches, and, if I could, they would hardly be fit to be reproduced. Mr. J. W. Neill, C. S., the present Commissioner of Nagpur, was good enough to send me some superior Valentines of this class, and I submit them now for the inspection of the Society. It will be seen that in these paintings, some of which are not without merit either as to design or execution, no human figures are introduced. In the ones I have seen, in days gone by, the positions of the women with the snakes were of the most indecent description and left no doubt that, so far as the idea represented in these sketches was concerned, the cobra was regarded as the phallus. In the pictures now sent the snakes will be seen represented in congress, in the well known form of the Caduceus or Esculapian rod. Then the many-headed snake, drinking from the jewelled cup, takes one back to some of the symbols of the mysteries of bygone days? The snake twisted round the tree and the second snake approaching it are suggestive of the temptation and fall? But I am not unmindful of the pitfalls from which Wilford suffered, and I quite see that it is not impossible that this picture may be held to be not strictly Hindu in its treatment. Still the tree and the serpent are on the brass models, which accompany this paper and which I have already shewn are to be purchased

in the Benares Brass Bazaar of to-day—many hundreds of miles away from Nágpúr where these Valentines were drawn. I am in correspondence with Mr. J. W. Neill on the subject, and hope to send some further information regarding the meaning of what may certainly be said to be these curious pictures of the Cobra. I shall be interested to learn how far their character may be considered by those, who are competent to judge on this subject, to connect them with the worship of Mahádeo?

I have now to state briefly the direction in which I would desire that these imperfect notes should be considered to lead. As the Society know, I have for some time past been endeavouring to collect information on the points of resemblance between the tumuli of India and the well known types of Scandinavia, of Brittany and of the British Isles. In my paper on the Kumáoṇ Rock markings, besides noting the resemblance between the cup markings of India and of Europe, I hazarded the theory that the concentric circles and certain curious markings of what some have called the "jews-harp" type, so common in Europe, are traces of Phallic worship, carried there by tribes whose hosts descended into India, pushed forward into the remotest corners of Europe and as their traces now seem to suggest, found their way on to the American Continent also.

Whether these markings really ever were intended to represent the Phallus and the Yoni, must always remain a matter of opinion. But I have no reason to be dissatisfied with the reception with which this, to many somewhat unpleasant, theory has met in some of the Antiquarian Societies of Europe.

No one who compares the stone Yonis of Benares, sent herewith, with the engravings on the first page of the work on the rock markings of Northumberland and Argyleshire, published privately by the Duke of Northumberland, President of the Newcastle Society of Antiquaries, which is also sent for the inspection of the Society, will deny that there is an extraordinary resemblance between the conventional symbol of Ṣiva worship of to-day and the ancient markings on the rocks, menhirs and cromlechs of Northumberland, of Scotland, of Ireland, of Brittany, of Scandinavia and other parts of Europe.

And a further examination of the forms of the cromlechs and tumuli and menhirs will suggest that the tumuli themselves were intended to indicate the symbols of the Mahádeo and yoni, conceived in no obscene sense, but as representing regeneration, the new life, "life out of death, life everlasting," which those buried in the tumuli, facing towards the sun in its meridian, were expected to enjoy in the hereafter. Professor Stephens, the well known Scandinavian Antiquary, writing to me recently, speaks of these symbols as follows:

"The pieces (papers) you were so good as to send me were very valuable and welcome. There can be no doubt that it is to India we are to look for the solution of many of our difficult archæological questions.

"But especially interesting is your paper on the Ancient Rock Sculpturings. I believe that you are quite right in your views. Nay I go further. I think that the Northern Bulb-stones are explained by the same combination. I therefore send you by this post a copy of the part for 1874 of the Swedish Archæological Journal containing Baron Herculius' excellent dissertation on these objects. Though in Swedish, you can easily understand it, at least the greater part, by reading it as a kind of broad north-English. At all events you can examine the many excellent woodcuts. I look upon these things as late conventionalized abridgements of the Linga and Yoni, life out of death, life everlasting—thus a fitting ornament for the graves of the departed.

"In the same way the hitherto not understood small stones with 1 or 2 or 3 or 4 etc. distinct *cups* cut in them (vulgarly called chipping-stones, which they never were or could be) I regard as the same thing for *domestic* worship, house *altars*, the family *Penates*."

I may note that this distinguished antiquary has adopted as a monogram for his writing paper a "menhir," round which a serpent is coiled, evidently copied from old Scandinavian remains.

Many who indignantly repudiate the idea of the prevalence of phallic worship among our remote ancestors, hold that these symbols represent the snake or the sun. But admitting this, may not the snake, after all, have been but a symbol of the phallus? And the sun,* the invigorating

* Since writing this I have come across the following remarks by Tod in the Asiatic Researches: 'The Suroi were in fact the Sauras, inhabiting the peninsula of Saur'ashtra, the Saurastrene and Syrastrene already quoted from the Periplus, and the kingdom immediately adjoining, that of Tessarioustus, to the eastward. That the Συροι of Saur'ashtra, and the Syrians of Asia Minor had the same origin, appears from the worship of Surya, or the Sun. I have little doubt, we have more than one "city of the sun"* in this tract; indeed, the only temples of the Sun I have met with in India, are in Saur'ashtra. The temple raised to Bál in Tadmor† in the Desert, by Solomon, where he worshipped "Bál and Ashtoreth, the strange gods of the Sidonians," was the Bál-nat'h, or Great God of the Hindus, the Vivifier, the Sun: and the Pillar erected to him "in every grove, and on every high hill;" the Lingam, or Phallus, the emblem of Bál; Bál-nat'h, Bál-césari,‡ or as Bál-Iswara, the Osiris of the Egyptians; and as Nand-Iswara, their Serapis, or Lord of the Sacred Bull; Nanda, or Apis "the Calf of Egypt," which the chosen people bowed to "when their hearts were turned away from the Lord."

* Heliopolis (Suryapúra) was one capital of Syria.

† Hence its name Bal-bec, Bécisan idol: so Ferishta derives it, the idol Bál This, the capital in future times of the unfortunate Zenobia, was translated by the Greeks to Palmyra; for it is but a translation of Tad-tar, or Tal-mor, and can have an Indian derivation, from Tar, or Tal, the Date, or Palmyra-tree; and Mor, the head, chief, or crown

‡ Cesari, a lion. Hence the royal appellation of the Cæsars; and Lion (Sin'ha) Lords of India, have the same meaning.

power of nature, has ever, I believe, been considered to represent the same idea, not necessarily obscene, but the great mystery of nature, the life transmitted from generation to generation, or, as Professor Stephen puts it, "life out of death, life everlasting." The same idea in fact which, apart from any obscene conception, causes the rude Mahádeo and yoni to be worshipped daily by hundreds of thousands of Hindus.

In a most interesting paper recently read at the Society of Antiquaries of France, some extracts of which I am now preparing for the Society, the authors M. M. Edouard Piette and Julien Sacaze have actually discovered the remains of phallic worship still existing among the people of the Pyrennees, the existence of which in Scandinavia, in days gone by, has already been brought to the notice of the Society by Dr. Rájendralála Mitra. These Archæologists have established the fact that to this day the menhir is still reverenced in the Pyrennees as the phallus. And referring to certain cromlechs in the neighbourhood, M. M. Piette and Sacaze hold that the circle, and central stone represent the "Sun." The sun, they suppose, was the sacred symbol of these tribes, and they suggest that the tumuli and sacred places of the race, were raised in this form, just as we now build our churches in the shape of a cross and place the sign of the cross on the graves of our dead. Whilst I was writing these very remarks on the Kumáoṇ markings, M. M. Piette and Sacaze were noticing the same points in regard to the tumuli of the Pyrennees. There are not wanting other remarkable points of resemblance between their paper and the Indian remains, with which M. Bertrand, President of the Society of Antiquaries of France, was much struck, and which induced him to send me, in September 1877, the proof sheets of the Proceedings of the Society. But the circumstance to which, in connection with the serpent worship of the above notes, I attach the greatest importance is, that I find that in many of these groups of tumuli, the circle is found with the serpent coiled round it.

"Thus Bál was the type of productiveness, and Ashtoreth, as destruction, most probably that of the Eight (Ashta) armed mother. A'shta-Tárá-Devi', or the radiated Goddess of Destiny, is always depicted as trampling on the monster Bhainsásúr, aided by her lion (when she resembles Cybele, or the Phrygian Diana) and in each of her eight arms holding a weapon of destruction: but I have ventured to pursue the subject elsewhere. I shall merely remark on the Suroi of Menander, that amongst the thirty-six royal races of Hindus, especially pertaining to Saur'ashtra, is that of Sarweya, as written in the Bhákhá, but classically Suryaswa. The historian of the Court of Anhulwarra* thus introduces it: "And thou, Sarweya, essence of the martial races." No doubt, it was, with many others, of Scythic origin, perhaps from Zariaspa, or Bactria, introduced at a period when the worship of Bál, or the Sun, alone was common to the nations east and west of the Indus; when, as Pinkerton says, a grand Scythic empire extended to the Ganges. Here I must drop Apollodotus and Menander, for the history of their exploits extends no further than the Suroi."—*Tod in Asiatic Researches.*

* Nehrwara of D'Anville and Renaudôt.

May not this represent the serpent encircling the Mahádeo as now seen in India and in the form which during many centuries has perhaps not undergone any great change?

A further detailed consideration of this view must be deferred until I can submit to the Society the result of the enquiries of M. M. Piette and Sacaze, many of the points of which, in connection with the remains discovered in India, cannot, I believe, be considered other than most remarkable.

And I may add in conclusion that no one who has been in this country and who has noticed the monolith Mahádeos of the Western Ghâts of the Himálayas and other parts of India, can fail to be struck with the resemblance that the menhirs of Carnac* in Brittany and its neighbourhood bear to the Siva emblems of India. I visited these remarkable remains when at home last year, and was quite taken aback by their resemblance to well-known Indian types. The monoliths of Scotland covered with what I believe to be "Mahádeo" symbols are of the same class. Added to this, in the recesses of the Pyrennees, the people whose language suggests their descent from the Tribes who erected the tumuli and menhirs, not only in this neighbourhood but also in other parts of Europe, still preserve traditions connected with these monoliths and have actually retained some traces of what I will call Ṣiva worship. With this evidence, added to the points noticed in my paper on the Junapani Barrows and the Kumáoṇ markings, the connection between the marks in India and Europe may then, I hope, be considered tolerably complete.

Appendix.

Note on the articles exhibited by Mr. Rivett-Carnac.—By Babu Pratapa Chandra Ghosha, B. A.

It is interesting to observe how the ornamental and the artistic help in complicating the myths of the Hindu religion. The occurrence of the snake on several of the articles exhibited is ornamental in some and inconsistent with the Ṣástras in a few. The snake on the spoon or ladle is for ornamental purposes, and that on the bell is altogether out of place. The Ṣástras make no mention of the necessity of any such figures on the handles of spoons, sacrificial ladles or water-pots. In the case of the bell the only figure directed to be represented on a religious bell is that of Garuḍa, the bird-god. The Padma Purana has the following—"He is not

* I may be permitted to be egotistical enough to note, that Carnac, the surname which my grandfather added to his own, by sign-manual on succeeding to General Carnac's property, is the Celtic "Carnej," "*Cairn*," or collection of monoliths, for which the village whence General Carnac took his name is celebrated. The family crest, a crescent and dagger, bears an extraordinary resemblance to the markings on some of the menhirs.

Fig. 1.

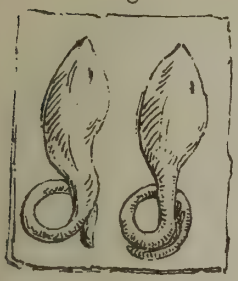


Fig. 2.

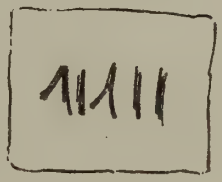


Fig. 3.



Fig. 4.

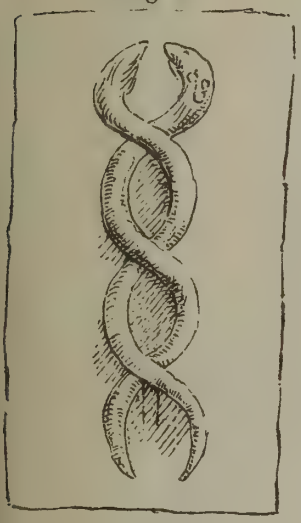


Fig. 5.

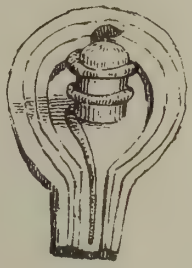


Fig. 6.

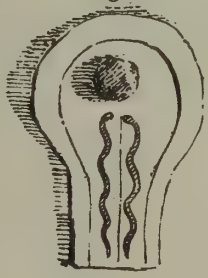


Fig. 7.

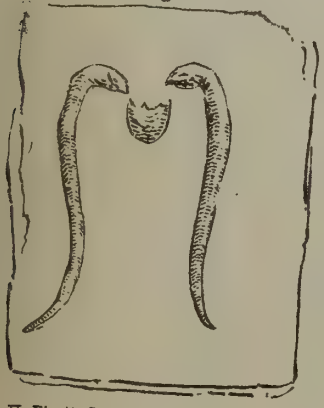
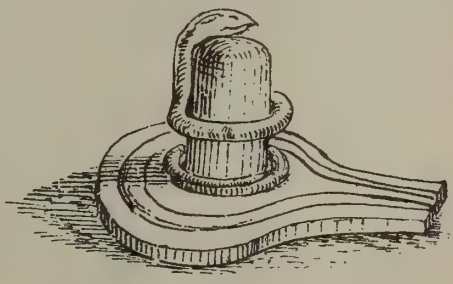


Fig. 8.



H. Rivett-Carnac, fec.

A. R. Caddy, del.

Photozincographed at the Surveyor General's Office Calcutta.

ILLUSTRATIONS OF MR. H. RIVETT-CARNAC'S PAPER ON THE SERPENT SYMBOL.

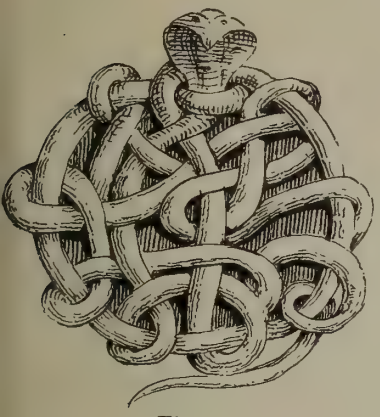
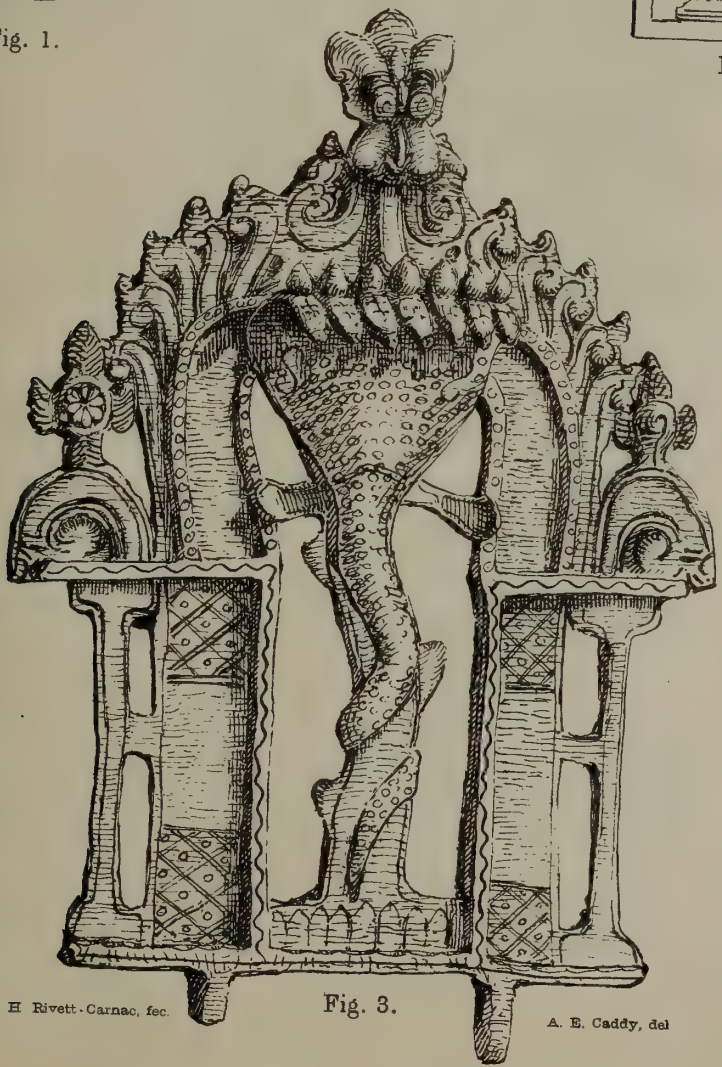


Fig. 1.



Fig. 2.



H Rivett-Carnac, fec.

Fig. 3.

A. E. Caddy, del

Photozincographed at the Surveyor General's Office Calcutta.

ILLUSTRATIONS OF MR. H. RIVETT-CARNAC'S PAPER ON THE SERPENT SYMBOL.

a Bhágavat (worshipper of Bhagaván) in this iron age who has not in his house a conch-shell or a bell surmounted by a Garuḍa or the bird-god." Such a bell as the above is used in the worship of Vásudeva (Vishnu). And although in the Ṣástras regarding the worship of Ṣiva and Rámachandra, it is nowhere provided that the bell used in such service should be adorned with figures of the snake and Hanuman (the monkey-god), the váhanas of the two gods respectively, yet the bell-maker in his devoutness has added these figures to the bell, thinking that such a bell would serve the threefold worship of Ṣiva, Vishnu and Rámchandra. The white paint of sandal-wood paste on the lingam in the form of a circle or a semicircle and a dot, is intended to represent the sacerdotal thread (*poitá*) and the mark (*phontá*) and, in the case of the semicircle, the half moon which is said to adorn the forehead of Ṣiva.

In the paper on Tree and Serpent worship published in Part I, No. 3 J. A. S. B for 1870, Ananta the serpent king is said to have a thousand heads and four arms. In the Briddha Baudháyana quoted by Hemádri, a Nága is ordinarily described to have five heads.

कुर्य्यान्नागं सुवर्णेन फणापञ्चकमंयुतं

In the Visvakarmá Ṣástra, Anantá is said to have a hundred thousand heads, and the other secondary eight Nágas to have seven heads each.

श्वेतदेहश्च कर्तव्यः स्फुरन्मौक्तिकसन्निभः ।

\+ + + + + + +

द्विभुजो बाहवः सप्तफणा मणिसमन्वितः ।

A Nága is said to have hoods and the body of a man, the lower extremities being like those of a reptile. A *sarpa* or serpent is a reptile. The three-headed or the nine-headed snakes are imaginative figures; they have no foundation in the Ṣástras. The figures of snakes forming backs of the shrines exhibited are evidently artistic and ornamental; they have no direct connection with serpent worship.

Cup-marks occurring in the vicinity of sepulchral monuments suggest their origin in the Smritis, in which it is stated that, after the cremation of the body, the son of the deceased is directed to offer water and milk, नीर and चीर, to the manes of the departed, and the water and milk are generally presented in unburnt clay cups, and it is not unoften that they are poured in little hollows made with the finger on the soft ground of the river side where the funeral ceremony is generally performed. May not the cup-marks on stone slabs represent these water and milk cups offered to the spirits of the departed?

The ant-hill has been known to be a resort of snakes where these reptiles have been seen to coil themselves up for comfortable and warm lodging. The eggs of ants and the queens of the same are well known favourite food of snakes.

Some Further Notes on Kálidása.—By George A. Grierson, Esq., b. c. s.

In the April number of the Indian Antiquary for 1878, there is an interesting account of the traditions concerning Kálidása current in Mysore.

The tradition in Mithilá, where I am at present, is somewhat different, and it may not be out of place to mention what I have gathered concerning Kálidása in Bihár.

It will be observed that the two legends coincide in describing Kálidása as being ignorant in his youth, and as acquiring his unrivalled power over the Sanskṛit language by the special interposition of a deity.

According to local tradition Kálidása was born at Dámodarpur, a village near the town of Uchait, and situated within the confines of the Madhubaní sub-division of the Darbhanga or Eastern Tirhút district.

As narrated in the article above referred to, he was left an orphan at an early age, and being destitute of means of support, he was, although a Bráhmaṇ, obliged to allow himself to be brought up amongst some low caste tribes, who tended cattle. He grew up so stupid, that even amongst his fellows he was considered little better than an idiot.

Now, there was once on a time a Bráhmaṇ, who lived in a certain city, who had a daughter (name unknown), who was the most learned woman of her age. She refused many advantageous offers of marriage, averring that she would only wed a man more learned than herself. At length her father, losing all patience, made a secret vow that he would marry her to the stupidest Bráhmaṇ he could find. So he went about searching for such a man; but could not find one, for ignorant Bráhmaṇs are rare in Mithilá.* At length one day, he was passing through Dámodarpur, when he saw a boy, dressed as a *gowálá*, sitting on the branch of a tree, and cutting the branch at a part between himself and the trunk. The Bráhmaṇ looked, and the boy cut on and at last, when he had cut through the branch, fell to the ground along with it. The boy got up, much hurt, and expressed wonder at the result of his labour. The Bráhmaṇ thought that if this boy were only of his caste, he would be just the husband for his daughter. He made enquiries and found that his name was Kálidása, and that he *was* a Bráhmaṇ, who, being left destitute, was supported by the charity of the Gowálás of Dámodarpur. After inquiring as to his stupidity, and finding the result of his inquiries satisfactory, the Bráhmaṇ took Kálidása to his home

* So says the legend. I only wish that, at the present day, there was some truth in the statement. The difficulty now is to find a Bráhmaṇ, who can do anything but fight and bring false cases. *Experto crede;* Tirhútiyá Bráhmaṇs are the bane of a sub-divisional officer's life.

and introduced him to his daughter, as her future husband. The daughter, in order to test Kálidása's knowledge, asked him if he was learned in Sanskṛit. Kálidása in his ignorance replied "ज्ञानो नास्ति मेव," meaning, of course, "ज्ञानं नास्ति." The daughter was highly offended at this ignorant answer and told her parent that he ought to have known better than to bring forward such a dolt as her future husband. But her father was not in the least taken aback and replied that, by saying as she had just said, she had shown her inferiority to Kálidása in Sanskṛit learning, in that she was not able to understand the excellence of the idiom with which he spoke,—"For," said he, "'ज्ञा' means 'knowledge,' 'नो' means 'of us,' *i. e.*, 'of me,' 'नास्ति' means 'there is not'; 'मेव' is compounded of 'मा' and 'इव,' of which 'मा' means 'Lakshmí,' and 'इव', 'like.' The whole phrase 'ज्ञा नो नास्ति मेव' therefore means 'I am not as learned as Lakshmí.'"* On hearing this explanation, the daughter was compelled to confess herself vanquished and agreed to marry Kálidása. After the performance of the ceremony, Kálidása hastened to meet his bride in the wedding-chamber; but she, being strong-minded, refused to allow any familiarities, until she had catechised him in the soundness of his knowledge of the Śástras. Of course, poor Kálidása was utterly confounded and so incensed his wife that she gave him a sound drubbing with a broom-stick.

He fled from the chamber and passed the rest of the night wandering about in a neighbouring wood, and crying with the pain of the broom-stick. In the morning he resolved to deserve his wife, by at least learning to read and write at a *páṭh-s'álá* in Uchait.

He attended the *páṭh-s'álá* regularly, but in vain. He was a bye-word amongst the pupils and an example of stupidity continually held up to the other boys by the *guru*.

At Uchait, there is a famous Durgásthán situated in the midst of the jangal: and one rainy stormy evening, his school-fellows dared Kálidása to visit it at midnight. Out of his innate stupidity, Kálidása was perfectly indifferent in the matter of ghosts and readily undertook to perform the venturesome action. As it was necessary for him to show some token of his visit, he smeared the palm of his hand with ashes, that he might leave the impress of his hand on the image.

Now, it must be observed, that it is the custom in Mithilá, when any one has committed a grievous sin, for the people to smear his face with ashes and to parade him in this state before the town. Therefore it is a "*yat paro násti*" insult to cast ashes on the face of an innocent man.

* I fear this story did not originally apply to Kálidása, though I have heard it attributed to him. I have met it in the Purusha Parikshá, but no mention of Kálidása is made in that version.

Kálidása arrived at the Durgásthán at midnight, as agreed upon, and prepared to leave the ashy impress of his hand on the face of the image of Durgá. No one but a fool would have dared to do this,—but then Kálidása was a fool indeed. As he lifted his hand, the awful consequences of the action became evident to Durgá, who foresaw that in the morning her own image would become the laughing-stock of all the country round; she therefore appeared before him in her proper form. Nothing deterred by this, Kálidása was reaching out his hand towards the face of the image in spite of her entreaties, when to save her reputation she promised him any boon he might ask for, on condition of his abstaining. He consented and asked to be the wisest man in the world. She granted the boon, promising that he should know the contents of every page which he should turn over during that night, and that he should always be victorious in any public disputation in which he might engage. Kálidása thereupon hurried home and spent the rest of the night in continually turning over all the leaves of all the books in his guru's library. At daybreak he retired to rest, and while he was yet asleep the pupils arrived and sat at the feet of the guru for their daily instruction. No one took any notice of Kálidása, as he remained asleep in the room, till the guru, while instructing, made a slip in his Sanskṛit. Without awaking, Kálidása instantly corrected it; and then all, being astonished at this precocity on the part of the fool of the Academy, joined in waking him and in demanding the authority for the correction. Kálidása, on the spot, quoted the necessary sutra of Páṇini, a work which, till then, he had never read. The astonishment of all can be imagined, and it was not diminished when he described the miracle which was the source of his knowledge.

There is a story about Kálidása current here, which is not unamusing. It runs as follows. There was a king called S'ibáy Siñh, the father of Rúpnáráyaṇ, who was renowned for his patronage of learned men. As he knew nothing himself, he invented a very simple way of judging the capabilities of the crowds attracted to his court,—he valued paṇḍits not by their learning, but by their weight. The fatter and more unwieldy a Bráhmaṇ was, the more he was honoured, and the greater the rewards given him for his learning. Before Kálidása had made his name, he determined to attend at the king's court. His friends dissuaded him, saying, "You will never succeed there, for you are small and lean," but nevertheless he started, repeating the following verse—

ददातु यच्छति वा न वा नरेशो यदि कर्णे कविभारतीं शृणोति ।
रातं यच्छति वा न वा नवोढा यदि केलीगृहदेहलीमुपैति ॥

That is to say, "Whether a king presents gifts or not, when he hears a poet's voice (he will certainly give); just as, whether a bride will admit a

man to her embraces or not, (she will certainly yield) once she has set her foot upon the threshold of the room dedicated to amorous sport." On the way he picked up a man of the Bheṛiyár or shepherd caste, who was the fattest man ever known. Kálidása persuaded him to accompany him and to pretend that he was the master, and Kálidása only the pupil. He further instructed the shepherd on no account to let his voice be heard, promising to do all the talking himself. The shepherd agreed to this, and the two journeyed to king Sïbáy Siñh's court. Kálidásá introduced the shepherd as his master, and the weight of the latter immediately told. He was rapidly promoted and soon became the chief paṇḍit in the court. All this time he never opened his lips, Kálidása officiating on all occasions as his mouth-piece; and probably the fact of his silence increased his fame, for the legend (unconsciously foretelling the story of Jack and his Parrot) says, that the king considered that as he did not speak, he must think a lot.

One day, however, the Bheṛiyár forgot his instructions, and in a full Sabhá, in the presence of the king, while the conversation was about the Rámáyaṇa, he opened his lips, and pronounced the word राभण when he should have said रावण.* The whole assembly was electrified at this one word of the Silent Paṇḍit. The king to do him justice saw the mistake, but still it did not shake his faith in the weight of its utterer. So he propounded the following question to the assembly—"I have always heard other paṇḍits pronounce the word as रावण; and I have seen the Rámáyaṇa, and in it the word is always spelt रावण. How then does it happen that this paṇḍit, who is the greatest paṇḍit at my court, pronounces व as भ, and says राभण? Thereupon Kálidása stood up, and on the spur of the moment repeated the following *s'loka:*

कुम्भकर्णे भकारोऽस्ति भकारोऽस्ति विभीषणे।
राक्षसानां कुलश्रेष्ठो राभणो न तु रावणः॥

"Kumbhakarṇa (was a Rákshasa, and) his name contains the letter "*bh*," so does the name of Vibhíshaṇa. Ráv(bh)aṇa was the chief of the Rákshasas, and therefore his name should be Rábhaṇa, and not Rávaṇa." This very lame excuse appears to have filled the *saḷhá* with admiration for Kálidása's wisdom, and thenceforth his name became famous throughout the three worlds.

At King Bhoja's court, the paṇḍit who had the ear of the king was

* This is evidently an allusion to the local pronunciation of the lower orders. In my notes on the Rangpur Dialect, published in the Journal of the Bengal Asiatic Society for 1877, I have shown that similar changes to this exist in at least one provincial dialect of Bengal.

one named "Dallan Kavi" (दल्लन् कवि).* This man was neither very clever nor very ignorant, but was only moderately learned (मध्यम पण्डित). By dint, however, of intrigues he had attained to such promotion, that no paṇḍit could approach the king, until he had been examined and passed by Dallan Kavi. Dallan naturally abused this power and introduced only the most ignorant paṇḍits to the king, sending all who were more learned than himself away, *re ineffectá.*

Kálidása wished to be introduced to King Bhoja: but, noticing that all the good paṇḍits returned home disappointed, while the bad ones were received into favour, he suspected the true nature of the case, and had recourse to the following artifice:—

He set out for Dhára, where King Bhoja reigned, and on the way he met three poor ignorant pædagogues, who were bent on the same errand as himself. These three had put their heads together to concoct some verses which they might recite before the king, but their united efforts only brought them as far as the first half of a single anushṭubh, which was as follows:—

अस्थिवद्बकवच्चैव पुनः सन्न्यासिदन्तवत् ।

This being interpreted means "Like a bone, like a crane, and again like a mendicant's tooth,"† but they could get no farther. When they saw Kálidása, they asked for his assistance, and he replied by giving the second half of the śloka impromptu, as follows,—

राजन भोज ते कीर्त्तिः शरच्चन्द्ररीचिवत् ॥

the whole śloka then meaning. "(Bright) as ivory, or as the (snowy) crane, as the teeth of a mendicant, or as the rays of the autumn moon, is thy glory, O King Bhoja," which incongruous display of metaphor immensely pleased the three poor paṇḍits. Kálidása then went on his way to Dhára, and dressing himself in very mean attire called to pay his respects to Dallan Kavi. He took care, however, to call when Dallan was not at home; and repeated this every day for a week, during which time he made himself thoroughly acquainted with all the habits, customs and hours of his future patron.

After the expiration of the week Kálidása went again to Dallan's house in mean attire, at a time when he was engaged in a ceremony usually performed apart from the multitude.‡ In spite of this, however, Kálidása

* So his name is pronounced and spelt now-a-days; a reference, however, to the S'árdúla vikríḍita verse later on will show that it was originally *Dalana* (दलन).

† A *Sannyásí* is not supposed to chew betel-nut and *pán*. Hence his teeth are not discoloured, but retain their pristine whiteness.

‡ तत्समये दल्लनकविवाच्यभूमिं गतः ॥

forced himself into his presence and made a most profound obeisance. Indignant at the interruption, Dallan ordered him to leave the place, but Kálidása pacified him by a string of far-fetched compliments, and he at length condescended to ask the new-comer his business. Kálidása replied that he was a poor poet from the south, who did not know the manners and customs of Dhára, and that he wished to be introduced to king Bhoja. Dallan asked if he had ever composed anything in Sanskrit. Kálidása replied, "a little," and that he was prepared to give an example there and then. It was as follows:—

इत्यपि डुकरति नगर वने
पुंसिवा घसि घसि लागु थकने ।
तथा कहत हम जिव कस ने
स्युः विनु जिव मोर कर कनकने ॥

This remarkable composition Kálidása translated as meaning. "The cuckoo sings in the city and in the forest, and a woman keeps pounding sandal wood, and says I cannot bear my life. Separated from my beloved one, my heart goes pit-a-pat."

To understand this ludicrous mixture of pedantic and ignorant mistakes some explanation is necessary. The following verse occurs in the *Amarakosha*, "वर्षाप्रियः परभृतः कोकिलः पिक इत्यपि," "the cuckoo is also (इत्यपि) called *pika* and other names." Kálidása, however, represents himself as thinking that the meaning is that *kokila*, *pika* and *ityapi* are all synonymous terms. In डुकरति there are three mistakes. Kálidása meant to say करोति, mistranslating it as "sings." The verb कृ "to make" is marked in the *Dhátupáṭhas* as "डुकृञ्," in which डु and ञ् are *anubandhas* or indicatory letters, which form no part of the root and only draw attention to certain peculiarities of conjugation. Kálidása, however, represents himself as thinking that only ञ् is an *anubandha*, and that "डुकृ" is a ready made root of the first class meaning "to sing." With regard to पुंसिवा, the following verse occurs in the *Amarakosha*:

पञ्चैते देवतरवो मन्दारः पारिजातकः ।
सन्तानः कल्पवृक्षश्च पुंसिवा हरिचन्दनं ॥

That is to say, "Of the following five names of celestial trees, the *mandára*, the *párijátaka*, the *santána*, and the *kalpavṛiksha* are masculine, while the *harichandana* is optionally neuter." Kálidása, however, took "*puñsi vá*" as being a synonym for "*harichandana*" or "yellow sandalwood." The words "घसि घसि लागु थकने" are Hindí. With regard to तथा, the "वनिता महिला तथा" of the *Amarakosha* led Kálidása to represent him-

self as saying that "तया" meant "a woman." The words "कहत हम जिव कस ने" are again Hindí. From "स्युः पुमांसः पञ्चजनाः पूरुषाः पुरुषा नरः" of the *Amarakosha*, Kálidása makes out that "स्युः" means "a beloved one." The rest of the verse is Hindí.

Dallan, after hearing this elaborately explained to him, came to the conclusion, as he well might, that Kálidása was a very poor pandit indeed, and that it would be quite safe to introduce him to king Bhoja. He therefore applauded the composition, and requested him to leave him, promising to introduce him after he had concluded performing the office at which he had been interrupted.

They accordingly started off to the palace, and on the way Dallan asked Kálidása, if he had composed any verse to recite before the king. Kálidása said he had one, and repeated the verse which he and the three poor Bráhmans had concocted between them. Poor as this was, it was far better than anything that Dallan could write, and his jealousy was not appeased until Kálidása had assured him that it was not his own, but that he had got some one else to make it for him. It was then written down on a slip of paper, and they proceeded into the audience chamber. After the usual *ás'írváda* the following conversation took place:

Dallan राजन् अभ्युदयोऽस्तु
King दल्लनकवे।
किं पत्रिकायाम्
Dallan इदं ॥
काव्यं
King कस्य कवेर्
Dallan अमुष्य छतिनस्।
King तत्पठतां
Kálidása पठते ॥
किन्त्वासामरविन्दसुन्दरदृशां।
द्राक् चामरान्दोलनाद् ॥
उद्वेलद्भुजवल्लिकङ्कणझणत्=।
कारः क्षणं वार्यतां ॥

That is to say, the king and Dalana were only talking prose, but Kálidása ingeniously turned the whole conversation into four complicated *S'árdúlavikríḍita* verses. The king was surrounded by a bevy of damsels, and Kálidása expresses himself unable to read his verse, being distracted by their charms. The translation is as follows:—

Dallan. O king, may you prosper.

King. Dallan Kavi, what have you in that paper?

Dallan. This is a poetical composition.

King. Of what poet ?

Dallan. Of this ingenious gentleman here.

King. Let it be read.

Kálidása. I proceed to read. But first, let the wanton tinkling of the bracelets on the slender arms of these damsels, beautiful-eyed as lotuses, as they wave their *chauñris* round thee, be stopped for an instant.

By this display of learning Dallan was obliged to confess himself conquered, and ever after Kálidása retained the post of honour near king Bhoja.

At King *Bhoja's* court, there were three paṇḍits whose names are now unknown, but who are called collectively the three *S'rutidharas.** Now, one of these three was such that he could repeat a composition when it was repeated before him once, another could do the same when it was repeated twice, while the third could do so when he had heard it thrice. In order to attract poets to his court, King Bhoja offered a prize of a *lákh* of rupees to any one who could compose an original piece of poetry. Numbers of poets became candidates for the prize, and recited their original compositions in the presence of the king and the three *S'rutidharas :* but always with the same result. *S'rutidhara* No. 1 exclaimed that the composition was an old one, that he had heard it before, and backed his opinion by repeating it, which he could, of course, do, as he had heard it once. Then No. 2, who by this time had heard it twice, also averred that it was an old one, and also repeated it, and the same course was followed by No. 3, who by this time had heard it thrice. In this way all the poets were driven with shame from the palace. Kálidása, however, was not to be beaten, and going before the king as a competitor recited the following *sragdharà* verses.

राजन् भो भोजराज ।
त्रिभुवनविदितो ।
धार्मिकस्ते पिताभूत् ॥

* A similar trio is met in the *Kathá Sarit Ságara*, (Introduction—story of Vararuchi). They lived, however, at Páṭaliputra, being patronized by king Nanda. The three were named Vararuchi, Vyáḍi, and Indradatta. The story tells how there was a bráhman named Varsha, who was an idiot. Kártikeya, however, had granted him as a boon, that he should be endowed with every science, with this proviso, that he could only communicate his learning to a bráhman who should be able to acquire it all at one hearing. Vararuchi was such a person, and Varsha communicated his lore to him in presence of the other two. Vararuchi thereupon repeated it to Vyáḍi, who was able to remember a thing on hearing it twice repeated,—and Vyáḍi again repeated it to Indradatta, who thus heard it three times, and was then himself able to repeat it.

पिता ते या गृहीता ।
नवनवतिमिता ।
रत्नकोटिर्मदीया ॥
तां त्वं देहि त्वदीयैः ।
सकलबुधजनैर् ।
ज्ञायते वृत्तिरेषा ॥
नो चेद्मिथ्या वचो मे ।
नवसुकृतिरियं ।
देहि लक्षं ततो मे ॥

That is to say,—"Hail, King Bhoja, thy father was famed throughout the three worlds as a virtuous man. The ninety-nine *krors* of jewels belonging to me, which thy father took from me, do thou now restore unto me. All the wise men who stand in attendance on thee know this to be the fact,—or else,—if my words are false,—this poem of mine is an original composition, and thou must pay to me the proffered prize of a lákh of rupees." The three *S'rutidharas* dared not say that they had heard this before, for that would be tantamount to confessing that Bhoja owed Kalidása ninety-nine *krors* of jewels.*

Before Kálidása became wise, but after his marriage, his wife used to try and teach him a little learning. One day she tried to teach him to pronounce the word "उष्ट्र" "*a camel*" *(ushṭra)*. But Kálidása could not form his mouth so as to pronounce the word, and at one time would he would say "उर्" (*ur*) and at another time उष् (*ush*). His wife at length lost her patience, and after saying—

उष्ट्रे लुम्पति रं वा षं वा ।
तस्मै दत्ता विपुलनितम्बा ॥
किं न करोति स एव हि रुष्टः ।
किं न करोति स एव हि तुष्टः ॥

"He mispronounces *ushṭra* with *ra*, and *sha*; and yet God has given him a round-limbed wife. What can He not do when he is angered, and what can He not do when he is pleased,"† she launched forth into words of no measured abuse. When Kálidása remonstrated with her on the foul-

* I have met a story somewhat similar to this in Persian literature, and much regret that I cannot lay my hands on it now. A comic version of the Persian tale can be found in Punch, Vol. II, January to June 1842, p. 254. It is called "Jawbrahim Heraudee."

† *i. e.* He must be angry with me, inasmuch as he has given me a dolt for a husband, and he must be pleased with Kálidása, for he has given him me for a wife.

ness of her language, she replied "नष्टस्य कान्या गतिः" "What else is fit for one so utterly debased?" These words dwelt in Kálidása's mind and rankled there. After the miraculous gift of learning was given to him by Durgá, as previously described, before returning home, he disguised himself as a *Vairágí* and, taking a dish of flesh food, sat himself on the edge of the tank where his wife usually bathed, and commenced to eat. His wife presently came up, and the following conversation ensued,—in the *Sárdúla-vikríḍíta* metre.

The wife. भिक्षो मांसनिषेवणं प्रकुरुषे ।
Kálidása. किं तेन मद्यं विना ॥
W. मद्यं चापि तव प्रियं
Ká. प्रियमहो ।
वाराङ्गनाभिः सह ॥
W. वेश्या द्रव्यरुचिः कुतस्तव धनं ।
Ká. द्यूतेन चौर्येण वा ॥
W. द्यूताचौर्यपरिग्रहो ऽपि भवता ।
Ká. "नष्टस्य कान्या गतिः" ॥

That is:—

Wife. Oh mendicant, are you eating flesh?
Kálidása. What is that without wine?
W. Do you also like wine?
Ká. Indeed I do, and women with it.
W. But courtezans expect money. Whence can you pay them?
Ká. From gambling and stealing.
W. So, Sir, you also gamble and are a thief?
Ká. "What else is fit for one so utterly debased?"

When the wife heard her own words thus hurled back in her teeth, she was ashamed and recognized her husband and, taking him home, ever afterwards lived in due subordination to him.

There was a *pis'ácha* or demon who inhabited a wood in Dhára, through which ran a much-frequented road. It was his custom to seize passers-by and to propose to them a question in the words "कोरुक्, कोरुक्, कोरुक्" "*koruk, koruk, koruk.*" As no one could understand this, the traveller was invariably seized and eaten by the demon, his worldly possessions being added to a pile of those which had been the property of previous victims. One day Kálidása had occasion to go along the road, and as usual, the *pis'ácha* seized him and asked the hard question. Kálidása understood it to be को ऽरुक्, को ऽरुक्, को ऽरुक्, that is to say, "who is free from disease?" repeated thrice. He thereupon replied as follows:

वर्षासु न गच्छति शरदि न भक्षति ।
हेमन्तशिशिरयोरत्ति च ।
गच्छति मधुमाधवयोर्यो खपिति च
सो ऽरुक् सो ऽरुक् सो ऽरुक् ॥

"He who stays at home in the rainy season, eats little in the autumn, eats his fill in the cold and dewy season, goes abroad in the months of spring, and sleeps in the hot season, is free from disease." The *pis'ácha* was much pleased at Kálidása's reply and released him, giving him all the wealth which he had levied from his former victims.

One cool spring evening when the south wind was blowing softly, and the mango blossoms were nodding on the trees, king Bhoja was walking in his garden, accompanied by Kálidása and Bhavabhúti. The king, charmed by the graceful motion of the mango blossoms, asked Kálidása to tell him why they waved so prettily. Kálidása replied :—

इयं सन्ध्या दूरादहमुपगतो ह्न मलयात् ।
तदेकां त्वद्गेहे तरुणवति नेष्यामि रजनीं ॥
समीरेणेत्युक्ता नवकुसुमिता चूतलतिका ।
धुनाना मूर्धानं नहि नहि नहीत्येव कुरुते ॥

"'It is evening, and, lo, I have come from Malaya afar; I would pass one night in thy house, O graceful one.' When the newly blossomed mango tendril is thus addressed by the wind, she shakes her head, and says 'Nay, nay, nay.'"

The king was pleased at this poetical description, but asked Kálidása, why the mango said "nay" three times. The latter dared not plead exigencies of metre, and being unable to give a plausible excuse, hung his head ashamed. The king then turned to Bhavabhúti, and asked him the same question. Kálidása's famous rival, giving a different meaning to नवकुसुमिता, which also means a woman who is not "चतुस्नाता", explained that the three-fold repetition referred to the three days of uncleanness which precede the purificatory bathing: as stated thus in the *S'uddhi viveka.*

प्रथमे ऽहनि चाण्डाली द्वितीये चर्मकारिणी ।
तृतीये रजकी प्रोक्ता चतुर्थे स्नानमाचरेत् ॥

"If a woman admit her husband on the first day, she sinks to the level of a *chándálí*, if on the second day, to that of a leather-worker, and if on the third day, to that of a *dhobiní;* but on the fourth day she may bathe and admit him."

There was a famous courtezan at *Dhára*, who loved Kálidása and was beloved by him in return. She also admitted king Bhoja to her favours.

The latter, however, she only allowed to approach her in pursuit of her calling, while Kálidása was admitted for pure love. For what will a woman not do for love? Does not the poet Vidyákara Miśra say as follows.*

बन्धनानि च भवन्ति बहूनि
प्रेमरज्जुकृतबन्धनमन्यत् ।
दारुभेदनिपुणोऽपि षडङ्घ्रिः
निष्क्रियो भवति पङ्कजबद्धः ॥

"Lo, there are many bonds, but none like the binding of the toils of love. Even the bee, skilled as he is in cleaving timber, lies helpless,—bound in the hollow of a lotus."

And again does not the poetess Lakhimá Ṭhakuráin say :—

प्रेमैव मास्तु यदि चेत्यधिकेन नैव
तेनापि चेद् गुणवता न समं कदापि ।
तेनापि चेद् भवति मास्तु कदापि भङ्गो
भङ्गोऽपि चेद् भवतु वश्यमवश्यमायुः ॥

किं भूषणैर्यदि न यौवनमङ्गनायास् ।
तेनापि किं यदि न रूपमपूर्वकञ्च ॥
रूपेण किं यदि न तत्र गुणा वसन्ति ।
किं वा गुणैर्गुणवता यदि नानुबन्धः ॥ १ ॥

॥ तथा च ॥

मनोभूमौ जाता प्रकृतिचपलायां विधिवशात्
सखे सम्यग्वर्धा प्रचुरगुणपुष्पप्रसविनी ॥
तथा संसेक्तव्या स्मरणसलिलेनानुदिवसं ।
यथा नेयं म्लानिं व्रजति मृदुलस्नेहलतिका ॥ २ ॥

॥ अपरञ्च ॥

आरभ्य गुर्वीं क्षयिणीं क्रमेण ।
लघ्वीं पुरा वृद्धिमतीं च पश्चात् ॥
दिनस्य पूर्वार्द्धपरार्द्धभिन्ना ।
छायेव मैत्री खलसज्जनानां ॥ ४ ॥

(1.) "Ah! may I never love, but if I must,—let it not be with a wanderer; and if it be with such, may he not be full of excellence: and even if it be thus, may my love be never broken; and if it be broken, may my life, which is not mine, be mine to cast away.

* The following verses are generally quoted by pandits when telling this story. As I have not noticed them in any of the usual Chrestomathies, I give them here.

(2.) "What are adornments, if a woman hath not youth; and what is youth, if she hath not perfect comeliness; and what is that, if virtue doth not dwell within; and what is virtue, if her beloved one doth not possess it too?

(3.) "My friend, a tender plant hath been planted by fate in the treacherous soil of thy heart. Cherish it jealously, for it beareth many flowers. Sprinkle it daily with the water of remembrance that it may not fade,—for that plant is love.

(4.) "Like the shadows of the fore and of the afternoon are the loves of the wicked and of the good. The first beginneth great and gradually fadeth away; but the second is delicate at first, and afterwards waxeth mighty."

One evening Kálidása was with his mistress, when they were interrupted by the sudden arrival of the king. Kálidása having no time to escape was obliged to hide himself under the bed, she cautioning him, as he valued his life, not to let his presence be known by either word or action. The king after his arrival, fancying himself alone with the courtezan, and wishing to pay a compliment to her beauty, laid his hand upon her bosom and addressed her as follows:

तव तन्वि कुचावेतौ नियतौ चक्रवर्त्तिनौ ।

Having got thus far, and having accomplished half a verse, he tried to finish it, but could not, and hemming and hawing, stuck there. Kálidása, who would rather have died than have heard an incomplete verse, could no longer contain himself; and his poetic fury overpowering him, he burst from under the bed, upsetting it and its occupants, crying out—

चाषमुद्रकरग्राही भवान् यत्र करप्रदः ॥

The whole couplet, containing a pun on the word कर, which means both "tax" and "hand," meaning—

King. "Verily, my fair one, thy breasts are like two monarchs of the world."

Kálidása. "Yes—for doth not His Majesty, who levieth tribute from sea to sea,* lay his hand upon them."†

The king, in consideration of the neatness of the reply, forgave Kálidása's indiscretion.

The following verses show how poetically Kálidása used to do his marketing.

He went up to a *pán* seller and said:—

* A चक्र, is a tract of country running from sea to sea.

† Which may also be translated "pay tribute (कर) unto them."

पर्णानि खर्णवर्णानि रमण्यु आकर्णलोचने ।
चूर्णमानीयतां तूर्णं पूर्णचन्द्रनिभानने ॥

"Give me golden-coloured *pán*, O fair one with the winsome eyes; and give me lime, O thou whose face is fair as the full fair moon,—and be quick about it."

Now it happened that the *pán*-seller was no other then Deví in disguise: and she, not understanding the tone of compliment which was followed so unceremoniously by a peremptory order, took it into her head that Kálidása was mocking her, and, being a woman, took offence and ignored his request. But Kálidása, nothing daunted, went on,—

विना खदिरसारेण हारेण हरिणीदृशां ।
जायते नाधरे रागो नानुरागः पयोधरे ॥

"(and give me also) betel spice, for without it the lip of my fawn-eyed love will lack its lustre; e'en as her bosom doth when shorn of its necklace."

Whereupon *Devi*, charmed with the sweetness of his language, appeared in proper form and gave him her blessing.

I have already quoted one uncomplimentary expression of opinion made use of by Kálidása's wife, with regard to her husband. Another runs as follows:—

वरं दरिद्रः श्रुतिशास्त्रपारगो
न चापि मूर्खो दशकोटिनायकः ।
सुलोचना जीर्णपटैर्विराजिता
न नेचहीना कनकैरलङ्कृता ॥

"Even a beggar, who knoweth the whole law and the prophets, is better than a ruler of millions who is a fool. A fair-eyed damsel shineth even in tattered weeds,—not so one who is blind, even though she is adorned with gold."

In the days of his wisdom Kálidása often took occasion to playfully chide his wife for her former unkindness; as in the verses connected with the following story.

The husband and wife were taking a morning walk by the side of a tank covered with lotuses. The sun was rising, and the bells of the lotuses were in agitation, although there was no visible cause for their being so. The wife accordingly asked:—

अनिलस्यागमो नास्ति द्विपदो नैव दृश्यते ।
वारिमध्ये स्थितं पद्मं कम्पते केन हेतुना ॥ १ ॥

Kálidása replied—

पावकाच्छिष्टवर्णानां शर्वरीक्षतबन्धनात् ।
सूर्यमुद्दिच्छतां कान्ते कम्पते नेन हेतुना ॥ १ ॥

She again asked—

काष्ठस्य भेदने शक्तिस्तथा वंशगणस्य च ।
अत्यन्तकोमलं पद्मं न भिन्नं केन हेतुना ॥ ३ ॥

And he again replied—

पद्मेन बन्धनं प्रीत्या भ्रमरः प्रेमरक्तकः ।
तस्मान्न भिद्यते कान्ते भवता सदृशं न हि ॥ ४ ॥

She. (1) "There is no current of air, nor can I observe the approach of any elephant. Why, then, is the water-lotus agitated?

He. (2) "The coal black bees have been clasped within its bells all night, and now they wish to see the sun. Therefore, my love, is the lotus agitated.

She. (3) "But bees and their kin can pierce the hardest wood, and the lotus bell is exquisitely tender. Why, then, does not the bee tear it forcibly open?

He. (4) "The lotus clasps him in her bell in love, and the bee returns her love. Therefore he does not tear the bell asunder,—for, my Love, he is not like thee."

The following verses in praise of contentment are universally attributed to Kâlidása in this part of the country. They are excellent specimens of their style, and are worth recording here.

निःस्वो वष्टि शतं शती दशशतं लक्षं सहस्राधिपो ।
लक्षेशो क्षितिपालनं क्षितिपतिश्चक्रेश्वरत्वं पुनः ॥ १ ॥
चक्रेशः सुरराजतां सुरपतिर्ब्राह्म्यं पदं वाञ्छति ।
ब्रह्मा शम्भुपदं शिवो हरिपदं ह्यण्डावधिं को गतः ॥ २ ॥
भ्रान्तं देशमनेकदुर्गविषमं प्राप्तं न किञ्चित् फलं ।
त्यक्त्वा जातिकुलाभिमानमखिलं सेवा कृता निष्फला ॥ ३ ॥
भुक्तं मानविवर्जितं परगृहे साशङ्कया काकवत् ।
ह्यण्डे दुर्मतिपापकर्मनिरते नाद्यापि सन्तुष्यसि ॥ ४ ॥
गत्वाद्यां नवमल्लिकां मधुकरस्त्यक्त्वा गतो यूथिकां ।
दैवात्तां च विधाय चम्पकवनं पश्चात् सरोजं गतः ॥ ५ ॥
बद्धस्तेन निशाकरेण विधिना क्रन्दत्यसौ मूढधीः ।
रुन्धोषेण विना पराभवपदं प्राप्नोति मूढो जनः ॥ ६ ॥

॥ तेन च ॥

कन्दैः फलैर्मुनिवराः क्षपयन्ति कालं ।
शुष्कैस्तृणैर्वनगजा बलिनो भवन्ति ॥
सर्पाः पिबन्ति पवनं न च दुर्बलास्ते ।
सन्तोष एव पुरुषस्य परं धनं स्यात् ॥ ७ ॥

(1.) "He who has nothing wishes to have a hundred; and he who owns a hundred, desires a thousand, while the lord of a thousand wishes for ten thousand. The possessor of ten thousand would be a king, while the king desires to be an emperor.

(2.) "An emperor wishes to rule the gods like Indra, while Indra aspires to the power of Brahman. Brahman himself wishes to obtain the throne of Śiva, and even Śiva, that of Vishṇu.* What being has ever reached the limit of desire?

(3.) "You have wandered over far and rugged countries, but you obtained no fruit: you abandoned your caste, and all your pride of birth, but your servitude was fruitless.

(4.) "You laid aside your pride, and ate like a crow,—fearfully, in another's house,—and yet you are not satisfied. To-day even your thirst dwells in vile and wicked actions.

(5.) "The bee deserts the fragrant jasmine and seeks the amaranth. Perchance he leaves it too, and approaches the *champaka*, and then the lotus.

(6.) "Imprisoned therein by fate and night, the foolish creature weeps. A fool may obtain discomfiture, but never contentment.

(7.) "Saints pass their lives enjoying roots and fruit. Elephants live on dried grass, and are mighty. Snakes quaff the wind, nor are they wanting in strength. Contentment alone should be the most precious wealth of man."

Much of the preceding is trivial, and, of course, none of it can lay claim to any historical value. My aim has been a very humble one, and I shall be happy, if I am thought to have only moderately come up to it. Even in a backward country like Tirhút, the old class of paṇḍits is fast dying out, and is being supplanted by men with a smattering of English and Urdú, and only a moderate book-knowledge of Sanskṛit. The older paṇḍits acknowledge the change with sorrow, and say that even the women who most conserve the purity of the language, are beginning to use *Yávaní*

* Vishṇu is appropriately placed last, as being absolutely निर्लोभ "free from desire."

words. Circumstances have thrown me much amongst these men, and I have taken advantage of this, to make an attempt to preserve some of the vast amount of unwritten lore, which is so fast being forgotten.

In this paper I have thrown into shape part of what I have collected concerning Kálidása: and if it meets with favour, and if time and health permit, I may at some future time give similar legendary accounts of other famous heroes and heroines of Mithilá. With regard to the verses sprinkled through the foregoing pages, my reading has been too limited for me to assume that none of them have been printed before. It must suffice that I do not remember meeting any of them in the usual collections of apothegms, and if my memory has betrayed me, I shall be the first to welcome my error being pointed out.

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Part I.—HISTORY, LITERATURE, &c.

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The Bangash Nawábs of Farrukhábád—A Chronicle, (1713—1857).—*By* William Irvine, C. S., *Fatehgarh, N. W. P.* Part II.

(*Continued from* p. 383 *of* Vol. XLVII, Part I, 1878.)

Nawáb Imám Khán, and the Confiscation of the Territory.

After Ḳáim Khán had been buried, the Bíbí Sáhiba sent for all her husband's sons, and dissimulating her wish to see Imám Khán succeed, directed Ahmad Khán to assume the leadership. Ahmad Khán, who had quickly penetrated her designs, gave a decided refusal. One after another, each son made the same answer. At length Imám Khán was selected and took his seat upon the *masnad*. He seems to have enjoyed little real authority. Although they attended to salute him no one presented any *nazar*; for months not a single *kauri* of revenue came in. After a time men ceased even to go near him, since he had no income from any source, by which he could assert his title.

When news of the defeat and death of Ḳáim Khán reached Delhi, many were deeply grieved and wrung their hands with sorrow; on the contrary, 'Abd-ul-Mansúr Khán Safdar Jang was rejoiced, and at once laughed and joked about the sad event. He then persuaded the Emperor that if he proceeded to Farrukhábád in person, the surviving Bangash leaders would be deprived of all excuse for not attending and submitting themselves. Even if they should refuse to obey and decline to deliver up their wealth, the result would be the same; they would be compelled to take to flight, and thus they

would be extirpated from the imperial territory. The young Emperor, who was entirely subservient to the Wazír, agreed to all his plans.

At the end of Zi'l Hajj 1162 H. (November 1749), Ahmad Sháh marched from Delhi as far as Koil; and Safdar Jang, leaving the Emperor, advanced to Thána Daryáoganj in Parganah Azamnagar of the Eta district, about thirty-five miles north-west of Farrukhábád.* He had with him forty thousand Mughals from Irán under the command of his relations, Mirzá Nasír-ud-din Haidar, Nawáb Sher Jang, Nawáb Isḥák Khán and others.

At the same time the Wazír ordered Ráját Naval Ráe to march to meet him without delay. This Naval Ráe, the Wazír's Diwán or Bakhshi, was a Saksena Káyath of the Chakwa and Parásna family, hereditary Kanungoes of Parganah Etáwah. He had risen by his own merits to be deputy governor of the Súbahs of Audh and Allahábád. He first was brought into notice by Ratn Chand Banya, the Diwán of 'Abdullah Khán and Husain Ali Khán (1712—1721).†

Naval Ráe, leaving the Sarkár of Lakhnau, marched towards Farrukhábád. On the 16th Muharram 1163 H. (15th December 1749), after Ráe Rám Náráyan had joined with 10,000 men, he crossed the Ganges. The day afterwards he moved to the banks of the Káli four or five *kos* distant, The next day Naval Ráe and Nawáb Baká-ullah Ḳhán crossed by the ford. and stood on foot side by side encouraging their men to exertion, the river being in flood, with heavy rain falling and a cold north wind blowing. Supplies were scarce and grain was the price of saffron. After a day spent in drying their things, the army marched to within three *kos* of Khudáganj, where the Afgháns were posted with a force estimated at 29,000 men and artillery. Another march of one and a half *kos* was made, and hostilities were imminent. Mír Muhammad Saláh and Ráját Pirthí Pat were placed in the van, Naval Ráe himself led the main body, while the left wing was commanded by Nawáb Baḳá-ullah Khán and the right by Ráe Rám Náráyan. There were 25,000 horsemen, 100 elephants and innumerable camp followers; and the camp stretched for five or six *kos* as far as the eye could reach. Negotiations were, however, opened and the Paṭháns returned to Farrukhábád. On the 23rd Muharram (22nd Dec. 1749) Naval Ráe was at Khudá-

* One account says he camped at Súrajpúr, but I do not know where that village is.

† S-ul-M. 875, Hisám-ud-din, and Gaz. N. W. P. IV. 307. See also the *Hadikat-ul-Akálim*, third Clime, under Sarkár Lakhnau, as to the founding of Navalganj and Khushálganj. Under *Itáwah* it is stated that Naval Ráe was born at Khaksís (?) He left a son, Khushál Ráe, who was subsequently naib of Allahabad under Asaf-ud-daula.

ganj. The Nawáb Wazír was then reported to be at Kásganj, and there was some talk of investing Farrukhábád.

We now return to the events occurring at Farrukhábád. Although the younger brothers of Ḳáim Khán and many experienced chelas still survived, at first no plan was decided upon, nothing was undertaken. At length by the exertions of Shamsher Khán, chela, some men were collected and posted, as we have just seen, on the banks of the Kálinadi near Khudáganj, seventeen miles south-east of the city, thus barring the advance of Rájáh Naval Ráe. Muḳím Khán, chela, was sent out in the other direction as 'Ámil of Parganah Shamshábád, with orders to take possession of the late Khán Bahádur Khán's property. Dáud Khán, Sa'dat Khán, Islám Khán and other chelas patrolled round the city night and day. Meanwhile the Bíbí Sáhiba and Imám Khán prayed God fervently that the Emperor might not be led astray by the Wazír's wicked advice, nor take away from their family the territory of Muhammad Khán Bangash, Ghazanfar Jang. To avert this calamity a friendly letter was prepared, and sent in a submissive manner to 'Abd-ul-Mansúr Khán Safdar Jang. It reminded him that formerly, when a noble was slain in battle, his treasures were appropriated while his dignities were conferred on his children. They hoped, therefore, that the prayers of the widow would be heard, that a *farmán* would be granted pardoning all bygone offences, and confirming the maháls in the name of Imám Khán.

From his camp at Daryáoganj the Wazír replied, that he had already presented a paper of requests to the Emperor, who had graciously signed an order conferring the territory on Imám Khán. This order he had brought with him. There was, however, the condition usual in such cases, that they should appear in person in the camp of the Wazír, who was invested with full powers, and place before him a large sum by way of fine *(nazarana)* on confirmation. Should allegiance be professed in the way suggested, there was little doubt that the *farmán* would be carried into effect, the dress of honour conferred, and with it the rank and dignity held by the former Nawábs. There were other flattering and deceitful words; for instance, he said he had bitterly felt the loss of Ḳáim Khán, it was like that of a brother, it was as if his right hand had been cut off; but, please God, he would not leave a vestige of the Rohela seed in the whole of Hindústán. Suspecting no treachery, the Bíbí Sáhiba believed in the truth of these promises, and began to prepare for departure to the Wazír's camp. A camel rider was sent to recall Shamsher Khán and Ja'far Khán from Khudáganj where they barred the way to Rájáh Naval Ráe. Instructions were also sent to them to engage Naval Ráe if possible in their favour, for he had the greatest influence over the Wazir.

By this time Ráják Naval Ráe, seeing that without hostilities he could not continue his march, had despatched a letter to Shamsher Khán and Ja'far Khán, telling them that he was a well-wisher to the family of the late Ghazanfar Jang, and when he reached the Wazír's camp, he would secure for them what they wanted without the slightest difficulty. The chelas, in the innocence of their hearts, believed these deceitful promises. Their readiness to listen to his proposals was increased on hearing that the Bíbí Sáhiba intended to go to the enemy's camp to treat, and quitting their position at Khudáganj they returned to Farrukhábád.

On their arrival the Bíbí Sáhiba set out with her chelas for the camp. When she reached Mau all the Paṭháns came out to meet her, and next day when she resumed her march, the Paṭhán commanders formed themselves into an escort. On arriving within three *kos* of the Wazír's camp they halted, and when he heard of her arrival the Wazír sent out Sher Jang to meet her. On coming near the equipage of the Bíbí Sáhiba he descended from his elephant, and standing in an attitude of respect, he expressed with tears his sorrow at the loss of Nawáb Ḳáim Khán. He wept because he and the Nawáb were brothers by exchange of turbans. The Bíbí Sáhiba said to him, "I count on you to replace Ḳáim Khán, and in this time of trouble, I expect you to side with me." Sher Jang swore by his head and eyes, that he was ready to give up even his life for her. The Bíbí Sáhiba was then conducted to her encampment near that of the Wazír. Negotiations began through Sher Jang.

Shortly after this Ráják Naval Ráe arrived. But, when he received audience of the Wazir, he did not act up to the promises he had made at Khudáganj. Indeed, he acted exactly contrary to his professions, and spoke nothing but evil of the Bangash family. This double-dealer, being trusted by the Wazír more than the rest of his servants, found acceptance for his evil words. From that time Sher Jang was set aside, and the matter was put into the hands of Ráják Naval Ráe. He sent for Shamsher Khán, Ja'far Khán and others, and demanded that, before they began to talk about the territory and the revenue-free grants, a payment of one *kror* of rupees should be made to the imperial treasury. After a long altercation Shamsher Khán and Ja'far Khán stood on one side and held a whispered conversation. They then came forward and agreed to give thirty lakhs of rupees nine lakhs in cash and goods, the balance of twenty-one lakhs to be paid in three years, on condition that the Emperor's *farmán* issued for the former territory, with the usual robe of investiture and a grant of the titles and dignities held by the former Nawábs. The Ráják rose and said, "Be it so, I will report what you say to the Wazír, and in the evening I will inform you of his orders." He then went to the Wazír and reported what had passed.

When they had consulted together, Názir Yáḳút Khán was sent to the Bibi Ṣáhiba. She received him and touching his "*nazar*" remitted it. Directly she saw him she burst into tears, for he called to mind her own chela, Yáḳut Khán Khán Bahádur. Yáḳut Khán, having made a condoling reference to the late Khán Bahádur, went on to deliver his message. The Wazír said that he would look on her as his own mother, that Ghazanfar Jang and Ḳáim Khán had been nobles of the highest rank, and that their successors should hold the same position. It was absolutely necessary, however, that she should make a payment of one *kror* of rupees. Bibi Hajíáin, without consulting the Bibi Sáhiba and against her wishes, began to say that as the Bibi Sáhiba could not help herself she would give half a *kror*, or fifty lakhs of rupees (£500,000). The Názir then asked for a blank paper with seal affixed. The Bibi Sáhiba, without referring to Shamsher Khán and Ja'far Khán, attached her seal to the paper and made it over to the messenger, who carried it off to the Wazír. Then the Wazír wrote out the sum of sixty lakhs of rupees. After this he told the Bibi Sáhiba to return to Farrukhábád, accompanied by Názír Yáḳút Khán and Jugal Kishor, who were to receive payment of the money.

Ráják Naval Ráe sent for Shamsher Khán and Ja'far Khán and told them that they were responsible for the due payment to the imperial treasury of the sixty lakhs, which the Bibi Ṣáhiba had agreed to with her own lips. Titles and rent-free grants were promised to them in reward. The chelas went to the Bibi Sáhiba and complained of her having promised sixty lakhs, when they had already settled for thirty lakhs. The Bibi Sáhiba defended herself by saying is was Bibi Hajíáin's fault. There being no remedy the Bibi Sáhiba started for Farrukhábád with Yáḳút Khán and Jugal Kishor. All the cash in the treasury, the jewels, the ward-robe, the furniture of the rooms, the kitchen utensils, the elephants, the horses, the camels, the cannon, the cattle, everything they had, was made over to the Wazír's agents. The eunuchs examined each article, appraised it at half its value, and then from the total thus arrived at they deducted half a lakh of rupees. The sum allowed was forty-five lakhs of rupees. The agents demanded the balance of fifteen lakhs from Shamsher Khán and Ja'far Khán; but they could only promise to pay the required sum within three years. The Názir (Yáḳút Khán) then directed that the Bibi Sáhiba should set out next day for the Wazír's camp, where all he could do to intercede for her should be done.

The next day the Bibi Sáhiba with her sons and chelas set out on her return to the Wazir's camp. When she came to Mau all the Paṭháns visited her to pay their respects, and from that place joined her retinue. On reaching the neighbourhood of the Wazír, she set up her encampment. Next

morning Shamsher Khán and the other chelas were sent for by Naval Ráe, and a demand made for the balance due. They were kept waiting till the evening with plausible words and the hope of a favourable decision. Meanwhile Naval Ráe went to the Wazír, announcing himself by a Harkára, of whom there were ten to twelve thousand employed as spies and messengers. Admitted to the presence of the Wazír, he reported in detail what had passed with Shamsher Khán and the others, and he also called attention to the large assemblage of Paṭháns in the Bibi Sáhiba's retinue. After this a messenger was sent to the chelas directing them to remain where they were that night, for their business had been put off till the next day. As a precaution against any opposition by the Paṭháns, Naval Ráe during the night, which was very dark, caused several guns protected by chains to be posted in front of the Bibi Sáhiba's camp. Then he sent to ask the Bibi Sáhiba if she had come to treat or to fight; if the former, he would advise her to send off to their homes the large body of armed Paṭháns who had accompanied her. The Bibi Sáhiba sent for the commander of each regiment *(tuman)* and ordered them to march back to Mau. They represented that being hereditary servants of her house, it was not right that, with their eyes open, they should leave her in the midst of the enemy's army, for their desertion would doom her to certain destruction. The Bibi Sáhiba's answer was that a wise man, after consenting to pay a large sum, should not raise further difficulties. The whole of the Paṭháns, unable to shake her resolution, marched away to Mau. There, to protect their families and property, they posted themselves outside the town in the mango groves, and remained on the alert day and night.

The Wazír, after having ordered Naval Ráe to keep Shamsher Khán and the four other chelas under surveillance, directed his march eastwards. When word was brought to Farrukhábád that the five chelas had been arrested, and that the Wazír was advancing eastwards, the inhabitants removed with their belongings to the town of Mau, and hardly a soul was left in the city. When the Wazír with his army came near to Mau, Rájah Naval Ráe asked urgently for permission to burn it down and level it with the ground, so that not a vestige might be left. Although in his heart the Wazír approved of this suggestion, still prudence prevailed, and he replied that the Paṭháns were too many and too powerful to be attacked, and as they might gain the upper hand, the project had better be postponed till some more fitting opportunity. It was enough to be thankful for that the mother of Ḳáim Khán, her sons, and her principal chelas had fallen into their hands. When the Wazír with his retinue drew near to Mau, he saw enough to convince him that what he had foretold was true, for all the Afgháns, whether infantry or horsemen, were drawn up on foot, with rockets, arrows, and matchlocks, ready to repel any attack. Without

attempting to interfere with them, the Wazir continued his advance eastwards along the banks of the Ganges till he came to Yáḳútganj, some six miles south-east of the city of Farrukhábád, and there he encamped.

Rájah Naval Ráe marched through the town of Shamsábád, and on reaching the city of Farrukhábád, went to the fort, where for some reason he remained. When he saw the fort and buildings, he exclaimed—"With places "like this they presumed to give themselves out for *Báwan Házáris* (com- "manders of fifty-two thousand); the fort is just like that of a petty zamin- "dar." He made other similar depreciatory remarks. Next morning he marched and rejoined the Wazír at Yáḳútganj. Then, like as the fowler scatters grain to lure the birds into his net, so the Nawáb Wazír entertained the Bibi Sáhiba, the five sons, and the five chelas with costly food, and furnished them with supplies of every description. Meanwhile he put off a final decision from day to day on various pretexts. Every day they looked for investiture with the khila't, to be followed by dismissal to their homes. Several days passed in this way. One night the Wazír asked Naval Ráe for his advice. His opinion was that the chelas should be fettered, and that the Wazír should march for Delhi taking them with him. On his departure, Naval Ráe said, he would seize the mother of Ḳáim Khán and the five young Nawábs, whom he would send off to the fortress of Allahábád. The Wazír approved of these proposals. Next day the five chelas* were seized, and placed upon elephants. The army then marched stage by stage past Muhamdábád† and through Sarae Aghat‡ on its return to Delhi.

After the departure of the Wazír, one day the Káyath sent for the five sons,§ and with deceptive words he began to extol the greatness, the glory, the bravery and the generosity of their family. Then getting up himself on some pretext, he said to an attendant in his confidence, "I will return "in a moment, bring the dresses of honour for the princes (Sáhibzádas)." Having said this he went away. Suddenly Mir Muhammad Saláḥ, accompanied by a number of fully armed men, with iron chains and a blacksmith, entered behind the princes. Nawáb Husain Khán who was also of the Shia (Imámiya) sect, said to Mír Muhammad Saláḥ, "Was there no one else "with this unbeliever, O Mír Sáhib! that you should accept this service; "it is strange that a man of your race‖ should perform such an unworthy

* (1) Shamsher Khán, (2) Ja'far Khán, (3) Muḳim Khán, (4) Islám Khán, (5) Sardár Khán.

† Thirteen miles west of Farrukhábád, on the Mainpuri road.

‡ In Parganah 'Azamnagar, about 26 miles west of Farrukhábád.

§ 1, Imám Khán, 2, Husain Khán, 3, Fakhr-ud-dín Khán, 4, Ismá'il Khán, and 5, Karímdád Khán.

‖ *i. e.*, a Sayyad or descendant of the Prophet.

"office; had we only arms by us, we should try first what our swords could do." Having said this, he stretched out his feet to be fettered, and each of the other princes, out of affection for his brothers, claimed to be ironed first. This indignity having been completed, they were placed in litters under guard, and forwarded to the fort at Allahábád. The news of their arrest spread consternation and despair amongst all the Afgháns.

By direction of the Wazír, Ráját Naval Ráe now took up his quarters at Kannauj, forty miles south-east of Farrukhábád, near the junction of the Kálinadi with the Ganges. This place was selected as being midway between the two Subahs of Audh and Allahábád and the new territory acquired from the Bangash family. Naval Ráe lived in the Motiya Mahal, built by the founder of the large saráe at Mirán-ki-Saráe, which he re-christened the Rang Mahal. Directly under his orders he had forty thousand horsemen. There were in addition the troops commanded by Nawáb Baḳá-ullah Khán, Amír Khání Nawáb 'Aṭá-ullah Khán, former ruler of 'Azímábád, Mirza 'Ali Ḳuli Khán, Mirza Muhammad Ali Kochak, Mirza Najaf Beg, Mirza Mashadi, Aḳá Muhammad Bákir Yarmani, Mír Ḳudrat 'Ali Khán Dáipuri,* Mír Muhammad Saláh Miránpuri.† From Kannauj were despatched subordinate rulers *(ámils)* and collectors of revenue *(sazáwals)* with orders to proclaim from lane to lane through all the villages the defeat and degradation of the Paṭháns. These agents, in their rapacity, acting even in excess of their instructions, began to levy fines from every inhabited place up to the confines of the towns of Shamsábád, 'Aṭáepur and Ḳáimganj. The town of Mau alone escaped. It owed its safety to the number of Paṭháns inhabiting it, of the tribes of Bangash, Afridi, Toyah, Khaṭak, Ghilzai, Warakzai, Kochar, Dilázák, Khalíl and Mahmand. These stood ready day and night to repel force by force, but they refrained from beginning hostilities, for fear of injury to the Bibi Sáhiba who remained in the custody of Naval Ráe.

It was arranged that Munshi Sáhib Ráe, an old servant of the Bangash family, who knew Naval Ráe before, should be sent to him. Being of the same caste and having already made Naval Ráe's acquaintance at Delhi, in a few days he managed to be admitted to the drinking bouts, which took place every night in the Rang Mahal after business was over. One night Naval Ráe got drunk, and knowing a little of the Shástras began to talk on religion, boasting also of his bravery. Sáhib Ráe, pretending to be

* Dáipur is in Parganah Kannauj, it is the easternmost village adjoining the first village in the Cawnpur parganah of Bilhor.

† This Miránpur is, I suppose, the town in the Bárha Sádát of the Muaffarnagar district, 16 miles east of Khátauli. The 'Amád-us-Sá'dat (p. 48), tells us he was a Bárha Sayyad.

equally drunk, replied that all this talk was flatly contradicted by his acts, which were directly opposed to the Shástras. Naval Ráe asserted that up to that day he had done no act forbidden by the Dharm-Shástra. Sáhib Ráe said—"What direction of the Dharm-Shástra is this then, by which "you vex poor innocent women, if this is sanctioned by the words of any "saint or sage, then quote the passage." Naval Ráe denied that he had injured any woman. Sáhib Ráe at once seized the opportunity and said, "To-day I saw a woman in prison said to be a Paṭháni, I have heard she "has done no harm; where, then, are your pious pretensions, you who have "a woman and a widow in your custody. Even admitting she is guilty, "you are now in full and peaceable occupation of this territory, and keep-"ing the widow is quite unnecessary." Naval Ráe at the time thought this reasoning just, and, it being then midnight, he told Sáhib Ráe to go and release her. Sáhib Rae replied that without an order in writing her guards would not let her go. Then Naval Ráe, stupified as he was, attached his seal to an order of release. Sáhib Ráe hurried to the entrance gate, showed the order to the sentries and gave them some money. He then urged the Bibi Sáhiba to lose not a moment, and she getting out her bullock *rath* started at once. They made such good speed that they reached Mau, a distance of sixty-one miles, in the space of nine hours, and when they got there one of the bullocks dropped down dead. At Kannauj, when morning broke, Sáhib Ráe forestalled every one by enquiring from Naval Ráe whether during the night he had ordered the release of the Bibi Sáhiba or not. When Naval Ráe replied that he had not done so, Sáhib Ráe produced the written order. He upbraided Sáhib Ráe for having tricked an old friend, but Sáhib Ráe retorted that he placed his duty to his salt before friendship. Naval Ráe ordered him out of his presence and despatched five hundred horsemen to bring back the Paṭháni. They rode as far as Nabiganj and the Káli river, but did not find her. The Káyath then wrote to the Wazír an account of her escape in which he screened himself as best he could.*

The oppressions of Naval Ráe's subordinates proceeded beyond all bounds, and the Afgháns began to concert together measures of resistance. A final outrage goaded them into revolt. One day a woman took some thread to the bazar for sale; and a Hindu in the service of Naval Ráe bought and paid for it. The woman took the money and spent it. A month afterwards the purchaser brought back the thread and wished to return it. The woman said she could not give back the price, nor was it the custom to give things back after a month. The Hindu used abusive

* Life of H. R. R. pp. 36, 37. The last part of p. 36, and top of p. 37, is all wrong. Naval Ráe did not need to pass through Mau, nor was he waylaid at three *kos* from that place.

language, she replied in similar terms; whereupon he took off his shoe and struck her. She began to beat her head and breast, and went to the principal Paṭháns, telling them it had been better if God had granted daughters only to Muhammad Khán, and she called down God's curse on them, the turban-wearers, for allowing her, the wife of an Afrídí, to be beaten with a shoe by a Hindu from the Kotwáli (police post).* Rustam Khán, a wealthy Afrídí, and several of the leaders from each *tuman* went to the Bibi Sáhiba's entrance gate, and told her that they would no longer submit in silence to the oppression of Naval Ráe. She asked their plans. They told her that if she would place one of her sons at their head to lead them on to victory, they would attack Rájáh Naval Ráe. She counselled them to dismiss such idle thoughts from their minds, for how could she join them while five of her sons were in the fort at Allahábád, and five of her principal chelas in prison at Delhi. When Rustam Khán and the others found the Bibi Sáhiba turned a deaf ear to them, they resolved on other plans.

Nawáb Ahmad Khán Ghálib Jang.

Ahmad Khán, second son of Nawáb Muhammad Khán, during the lifetime of his elder brother, Ḳáim Khán, lived for some time at Delhi. He had taken a farming lease of five parganahs, Sakráwah and others, from his brother Ḳáim Khán. Instead of remitting the revenue he spent it on a silver howdah, such as none but Ḳáim Khán used, and caused a fan of peacock's feathers to be waved over his head. Mahmúd Khán Bakhshi denounced Ahmad Khán to Nawáb Ḳáim Khán, and at his instigation a thousand horse were despatched to Sakráwah with orders to cut off Ahmad Khán's head. Having received word of their approach Ahmad Khán escaped to Rudain in Parganah Kampil, thirty miles north-west of Farrukhábád, where his father-in-law lived, and thence he made his way to Delhi, where he placed himself under the protection of Gházi-ud-din Khán Firúz Jang. When the war with the Rohelas broke out, he managed with the connivance of Firúz Jang to escape from Delhi at midnight, without receiving the Emperor's permission. We have already mentioned the part he took in the campaign.

After the confiscation of the territory and the return of the Wazír to Delhi, Ahmad Khán lived in retirement at Farrukhábád in his house, known till a few years ago as the "Kacha Ḳila'" (the mud fort), near the Bihisht Bágh. He could barely afford to keep two servants and a boy Ramzáni, the son of an old servant of the house. Some months passed in this way, when one day in the month of Sáwan (July) fifteen men from Mau, each

* Amád-us Sa'dat, p. 46, from line 2. Ahmad Khán was I believe at Farrukhábád, so I have omitted his name from this story, the scene of which is Mau.

with a slave behind him, rode in at midday and dismounted. Ahmad Khán when he saw them was greatly perplexed to know what it meant. The Paṭháns saluted him, and he asked their errand. For fear of Naval Ráe's spies, who prowled about the city, they said they had come to make some wedding purchases. The Nawáb ordered food to be got ready for them.

The visitors then said they wished to talk to the Nawáb in private. The two khidmatgars and the boy Ramzáni were turned out, and the chain was put on the female apartments. The discussion endured for some five hours, during which Ramzáni was called in to fill *huqqa* after *huqqa*. Whenever he went in, all the Paṭháns stopped speaking. From the sounds which came out through the doors, it appeared that the Nawáb was maintaining an argument with them, to some things he agreed, others he disputed. It appeared afterwards that the Nawáb had told them he had no confidence in them; as they had forsaken Ḳáim Khán on the field of battle, so would they forsake him. Then they put up their hands respectfully and pledged themselves never to quit him in the hour of danger, they would either conquer or die. The Nawáb demanded an oath from them and they solemnly swore fidelity to him on the holy Kurán.

A little before sunset the Paṭháns said they must go, there being little daylight left in which to make their purchases, and the next day they must return to Mau. They mounted and went away to the Tirpolya Bazar where each bought what he wanted. Naval Ráe's spies and patrols challenged them, but they said they had come to buy cloth in the bazar. They were really Rustam Khán and a deputation of Paṭháns from Mau. They stopped the night at Ahmad Khán's and finally obtained his adherence to their plans. They then returned to Mau.

In a few days a messenger, Ghul Miyan, came from the Bibi Sáhiba asking Ahmad Khán to come to Mau. Hiring eight kahars and having his old *palki*, the pole of which was nearly in two, tied together with rope, he set out for Mau. There he paid his respects to the Bibi Sáhiba and presented his *nazar*. Apparently she had been talked over, and was now eager for an attack on Naval Ráe. The only difficulty was the want of funds.

Rustam Khán Afrídí, on condition of a grant of the half of any territory recovered, brought out all the ready money he possessed to the extent of some thousands of rupees. This money was divided according to their need among his brothers and the several commanders *(Tumandár)*. Ten thousand rupees were sent to Nawáb Ahmad Khán for his more pressing expenses. In return the Nawáb conferred on Rustam Khán the dignity of Bakhshi, or Commander-in-Chief, and sent him a robe of investiture of seven pieces. A well-to-do Kúrmi, named Ghassá, of Chaloli, close to

Káimganj, was induced on receipt of a revenue-free grant of that village to make an advance of several thousand rupees. Some money is also said* to have been obtained by the plunder of a trader's house in a town sixteen *kos* from Mau, where seventy bags of rupees and one bag of gold had just been received from Lakhnau.

After some money had been collected in these various ways, the Nawáb set up his standard in the Moti Bágh in Chaloli. His force soon amounted to six thousand men, which rumour magnified into fifty thousand. Here the Bibi Sáhiba invested Ahmad Khán with a *khilat* as reigning Nawáb, and the Paṭháns presented their offerings. Ghassá Kurmi was sent to attack the Thána of Shamsábád, some five or six miles east of Mau. On the same day men, who were told off for the purpose, fell upon all Naval Ráe's thánas and overpowered his men.

Nine days after the first rising Ahmad Khán brought out all his cash and placed it in a tent.† He then proclaimed by beat of drum that he who could not support himself would be permitted, after his third fast, to take from this money, if a footman, one and a quarter anna, if a horseman, three annas. To take more was prohibited; and those who were well off took nothing. The army, now swollen to some twelve thousand horsemen and twelve thousand foot, marched from the Moti Bágh, and in five days reached the Jasmai gate at Farrukhábád, where they halted near the house of Miyan 'Ali Sháh. The rains of Bhádwan (July—August) were falling, and as protection against the continuous wet weather, some put up mats, some reed screens, some blankets, and some sheets. There were some even who had nothing and camped in the open. Proposals to attack the Bamṭelas of Rashídpur, who had taken possession of some of the vacant forts in the city, were brought forward but rejected by the Nawáb. In his opinion there was no need of entangling themselves in such brambles before they had overcome Naval Ráe. The march was resumed and the next halt was at Amánábád, parganah Bhojpur, about six miles south of Farrukhábád on the Cawnpúr road.

Battle of Khúdaganj and death of Naval Ráe.

A short time after the first rising, word had been brought to Naval Ráe at Kannauj that the Paṭháns of Mau had risen and had surprised all his *thánas*. Naval Ráe began by using strong language about stripping naked all those Paṭhán bakers *(nánpaz)* and vegetable sellers *(kunjṛa)* including their women; and he swore they should all be trodden to death under the

* 'Amad-us-Sa'dat, p. 46.

† Of the kind called Dalel-Kháni, so made that, however strong the wind blows or however heavy the rain is, it will neither fall nor leak.

feet of elephants. Then he ordered out his artillery and camp equipage, and marched westwards from Sháhábád—Kannauj, at the head of an immense force, with one thousand cannon of all sorts, large and small. He pushed on to the Káli river as quickly as possible, and crossing it pitched his camp on the left bank near Khudáganj, seventeen miles south-east of Farrukhábád and twenty miles north-west of Kannauj.* Soon after this, letters from the Wazír arrived, announcing his own approach and giving orders that till the two forces had joined, the attack was to be postponed. The Wazír's words were, that if any of the wild beasts, *i. e.*, the Paṭháns, survived the battle, he would tie stones round their necks and drown them in the river, not one of their seed should be left alive in Hindústán. Naval Ráe proceeded to carry out these orders. He caused a ditch to be dug round his camp, and posting his guns all round his entrenchment, he secured them to each other by chains. Heralds (*nakíb*) were sent to proclaim aloud from tent to tent the Wazír's instructions, and the army was warned that any one engaging the enemy would come under the displeasure of the Wazír and the Ráják.

Meanwhile, on the Bangash side, at Rustam Khán's suggestion, Nawáb Ahmad Khán ordered a march eastwards. His personal troops were under the command of his son, Mahmúd Khán, then about fifteen years of age, and there were other contingents under Zu'lfiḳár Khán, Khán Sámán Khán, Jamál Khán, Muhammad Máh Khán, Bahádur Khán, Roshan Khán, Makhan Khán, 'Abd-ur-rahím Khán, Biráhim Khán Káshmíri, Yár Khán of Dáipur and Mirzá Anwar Beg. There were also the following chelas of Nawáb Muhammad Khán, Ghazanfar Jang, *viz.*, Háji Sarfaráz Khán, Ranmast Khán, Sarmast Khán, Námdár Khán the elder, Námdár Khán the younger, Sherdil Khán, Náhardíl Khán, Jowáhir Khán, Salábat Khán, Hafízullah Khán, Bárá Khán, Pahár Khán, the five sons of Shamsher Khán, two sons of Muḳím Khán, 'Usmán Khán, son of Islám Khán, also Mahtáb Khán and Diláwar Khán Janúbi. The Paṭháns encamped about two miles from the army of Naval Ráe. The site of the encampment was, tradition says, at Rajepúr on the metalled road, three miles north-west of Khudáganj.

To reinforce Naval Ráe, the Wazír had on the 27th and 28th Sha'bán (21st and 22nd July, 1750), detached a force of twenty thousand men under Nasír-ud-dín Haidar, Isma'il Beg, Muhammad Ali Khán Risaldar, Ráják

* The author of the "'Amád-us-Sa'dat" tells us (p. 47,) that to the Káli river are ascribed miraculous properties. When only knee-deep, if you beat the kettle-drums, it rises over an elephant's head. He offers the rationalistic explanation that the bottom is yielding, and soon gets trodden into a quagmire, so that any one afterwards crossing by the same passage would sink in.

Debi Datt, Faujdár of Koil, and others. When Ráját Jaswant Singh of Mainpuri* heard that this force had reached Sakít† he sent word of its approach to Nawáb Ahmad Khán, telling him that in one day it would reach Mainpuri, and unless he finished with Naval Ráe at once, he would be attacked both in front and rear. On receiving this intelligence the Nawáb sent for Rustam Khán and Sardár Khán Paṭháns and told them the news. They said they were ready. The Nawáb replied "To-morrow, putting our trust in the mercy of God, we must attack the enemy, and let events take their course."

Ghul Miyan, a clever spy, was sent disguised as a faqir to reconnoitre the enemy's camp. He found no place unprotected with cannon, except one entrenchment held by Sayyads of Bárah, which lay quite at the back of the camp, to the south, on the banks of the Kálinadi. Ghul Miyan returned to the Nawáb and reported that this place was guarded by five hundred matchlockmen only, but to reach it would entail a détour of three *kos*. He promised to conduct the Nawáb to the spot.

Accordingly, at three hours after sunset on Thursday the 9th Ramzan 1163 H. (1st August 1750), Ahmad Khán having ejaculated a "*Bism-illah*" got into his *palki* and set out, followed by twelve thousand Paṭháns on foot and twelve hundred horsemen. Rustam Khán was posted on his left. Heavy rain was falling at the time. Ghul Miyan took them up to the right hand a distance of three *kos*, in order that the tramp of the horses' hoofs might not reach the ears of the enemy. In this way the front of Naval Ráe's camp was avoided, and they got round in his rear near to the Káli where was the position held by the five hundred Sayyads. This spot is said to have been on the boundary of the two villages of Kaithá and Gangni, about a mile west of the town of Khudáganj.

At an hour and a half before sunrise, Ghul Miyan pointed out to the Nawáb the Sayyads' battery in front. The Sayyads heard the talking and said to each other, that it seemed as if the Paṭháns were coming to the attack, and they redoubled their vigilance. Then the Paṭháns made a rush, and from both sides matchlocks were discharged and swords used. The rain increased the confusion, for it was difficult to hear what one man said to another. An alarm passed through the camp that the Paṭháns had effected an entry into one of the entrenchments. At the time it was so dark that you could not tell friend from foe. Then the artillerymen began to fire their guns altogether at random, those on the west fired to the west, those on the north to the north, and those on the south to the south.

* Gaz. N. W. P. IV, 550. Ráját from S. 1783 to S. 1814 (1726-1757 A. D.)

† In Parganah Eta-Sakít of the Eta district about twenty miles north-west of Mainpuri.

The Sayyads succeeded in repulsing the Paṭháns, who fled some distance. Ahmad Khán cursed them and cried out—"Have you brought me here "only to see you run away, to-morrow your wives will be dishonoured and "yourselves stripped naked." Then he drew his knife, intending to sacrifice his life, as he disdained to leave the place alive. Rustam Khán Afrídí and other leading Paṭháns dissuaded him. The Nawáb replied that, since they had come to fight to the death, they must all dismount and precede him on foot, he should then know that they meant to slay or be slain. The Paṭháns consented, and they all dismounted. It is well known that when a horseman dismounts to fight on foot, the case is desperate and he will then neither give nor receive quarter. The Paṭháns made themselves ready by tying the skirts of their heavy plaited coats *(jámah)* round their waists, and taking shield and sword in hand, they advanced to renew the attack. Some of the Sayyads were killed, the rest fled and the battery was cleared. The whole of the Paṭháns thus made their way into the enemy's camp, and penetrated to Naval Ráe's enclosed tents (*surácha*) where the troops were few, the main body being distributed from point to point to guard the batteries. A messenger reported to Naval Ráe that the Paṭháns having driven back the Sayyads had entered the camp. Their weapons were now clashing at his own entrance door. As Naval Ráe never went out without saying his prayers, after hearing the report he sat down to worship, saying, "It is no matter, I will soon seize the whole of these vegetable sellers in "the corner of my bow." The messenger came and made a second report, shouting out disrespectfully, "O you idiot! Here you sit while the Paṭháns "cut down the enclosure to your tent." Thus urged to action Naval Ráe armed himself. Then he sent for and mounted one of the two elephants, which stood at his door day and night caparisoned with cloth of gold *howdahs*. He had two quivers full of arrows attached to his *howdah* and two bows. Putting two arrows at a time into his bow, he sent them at the Paṭháns, calling out "*Már more sáre kunjron ko*" (kill me all these vegetable sellers.) Fighting was still going on when the day broke on Friday morning, the 10th Ramzán. On this side Ahmad Khán was seated up in his *palki*, protected by the Paṭháns with their shields, lest some bullet or arrow should hit him. There were fifty or sixty Kahárs to carry the *palki* and one of them was wounded by a spent ball.

Rustam Khán and Muhammad Khán Afridi,* with one thousand horse and four thousand foot, had meanwhile come up to the spot where Naval Ráe was standing in a group of three or four hundred men, with six or seven elephants. They paid little attention to this small group, and advanced in search of Naval Ráe. They had gone only a few paces when a

* Amad-us-Sa'dat. p. 47, half way down.

Paṭhán of Naval Ráe's escort threw a "*hashpelai*,"* calling out in Pushtu, "O infidels! where are you going, are you blind, let no one approach, for "these are chiefs and leaders." They heard the "*hashpelai*," but did not understand the words. Muhammad Khán's brother, who had lately come from Afghanistán, translated them. Muhammad Khán ordered his men to ride at the group, while the footmen discharged their firelocks. Many of the enemy were disabled but the rest advanced. Then Naval Ráe made use of abusive language, and said, "O you vegetable sellers! I will thrash you, "you scamps, step by step out of this country." As he spoke he let fly an arrow which grazed Muhammad Khán's chest. Taking the arrow in his hand, Muhammad Khán said, "O arrow of an impotent man! is this all "you can do?" When the other heard this, he fired a second arrow which would have been fatal to Muhammad Khán, had it not struck a youth near him in the neck, so that he fell off his horse. Then a Sayyad of Bárha, Muhammad Saláh, advanced and said, "Máháráj! I do not say the Paṭháns "will deceive, it is not necessary to show mercy, let us do all we can against "them." He had spoken thus far, when a slave of Muhammad Khán's father fired off his piece, and hit the Sayyad on the forehead so that he expired in his *howdah*. Then one of the Afrídís killed Naval Ráe with a musket shot. After this the Paṭháns advanced and put many to the sword. The elephant driver, on seeing that Naval Ráe was dead, drove the elephant into the Káli; it swam across and bolted with its driver to Kannauj. When the Rájáh's army saw that their leader was killed or wounded and had retreated, they too began to give way. Thousands of horsemen and foot soldiers fled. Those who could swim or were well mounted escaped across the Káli; those who were poorly mounted were drowned. The victory was most unexpected both by the Paṭháns and on Naval Ráe's side.

After the fight but before the kettle-drums had beaten the triumphal march, Muhammad Khán went to the quarters of the money dealers. In a small tent he found several fat bunyas playing at "*chaupar*." On seeing him, they said, "Come in, tell us, are the Paṭháns yet retreating, "or are they still where they were?" The poor wretches thought he was one of their side, for they never dreamt of Ahmad Khán having conquered. Muhammad Khán told them that Naval Ráe was dead, far and near Ahmad Khán now ruled, and they had apparently been dreaming to remain in such ignorance. They turned pale when they heard the news. Soon after forty or fifty Paṭháns coming up wished to slay the owners of the tent. The bunyas in their fright said they had boxes of gold coins and rupees, which they would give up to be let go, they had been subjects of Safdar Jang and would

* Called in Hindi "*alghoza*;" two races use them, Mewátis and Afgháns; they are made out of a piece of cane or bamboo.—'*Amád-us-Sa'dat.*

be loyal subjects of Ahmad Khán. The Paṭháns proposed to get these boxes first, and then kill the men. This Muhammad Khán forbade. Then plunderers arriving from all sides, Muhammad Khán put the slave who shot Muhammad Saláh with several Afridis in charge, and took the Hindus to his camp. There he reported to Rustam Khán, who sent off three hundred footmen to guard the tent and bring away the boxes, in which there was a large amount of money.

Meanwhile an elephant of Naval Ráe's, with a gilt *howdah* and gold brocade trappings, had been found in the camp. The Paṭháns were about to slay its keeper, when with great presence of mind he drove his elephant up to Ahmad Khán's *pálki*, and making it kneel he congratulated the Nawáb on his victory and requested him to mount. The Paṭháns approved of this idea, and pushed the driver off with the ends of their sticks, thus sparing his life. At the time Ramzani was holding the side of the Nawáb's *pálki* in order to steady it. The Nawáb ordered him to mount the elephant. He obeyed, and though not used to elephants, he managed to drive it off. Plunder of the camp then began, the Nawáb's orders being that elephants, cannons, tents and kettle-drums were his, the rest belonged to the seizer. The amount of plunder was so great, that several men acquired property worth as much as one lakh of rupees (£10,000).

In this battle, besides Naval Ráe and Mír Muhammad Saláh already named, 'Ata-ullah Khán* and many principal men lost their lives. The author of the "Tabsírat-un-názírín" gives the names of as many as thirty-seven Sayyads and Shekhs of Bilgrám in Audh, who lost their lives on this fatal day.

Nawáb Baḳáullah Khán, who had been summoned in great haste, had left Makhanpur, about fourteen miles south of Kannauj, on Thursday the 9th Ramzan (1st August, 1750). That night he was at Kannauj, and next day, the 10th (2nd August, 1750), starting before daybreak, they had arrived within four *kos* of Naval Ráe's camp, when suddenly fugitives began to pour in. Ráe Partáp Singh, who had been wounded, was the first to report fully the disaster. Baḳáullah Khán halted for two or three hours, and thinking his force too small for an advance, he retreated on Kannauj in order to remove Rájáh Naval Ráe's women and children. With these, accompanied by the Rájáh's corpse, and such elephants and horses and other property as they could collect, they set out on their retreat. The fugitives from the battle-field followed them, among others Ráe Partáp

* Son-in-law of Háji Ahmad, the brother of Allah Wardi Khán Mahábat Jang, ruler of Bengal. He had been Faujdár of Bhágulpúr and had held other appointments till having quarrelled with his uncle, he came to Audh.—*J. Scott, Ferishta* II. 343-351. *Seir Mutaqherin*, I. 458.

Singh and Husain 'Ali Khán, who had both been wounded. On the way all that could be removed was carried away from Biṭhúr. On Saturday the 11th (3rd August 1750), they came to Muhsinpur, some five miles west of Cawnpur. Next day they arrived at Jájmau, six or seven miles east of Cawnpur on the Ganges, and on the 14th (6th August, 1750), they were at Kánpur, a place five *kos* from Koṛá. Thence the late Rájáh's family was sent across the Ganges towards Lakhnau; while Baḳáullah Khán took up a defensive position at Koṛá.

The morning after the victory Nawab Ahmad Khán's army had swollen to sixty thousand men, including the Sáhibzádas, the chelas, the men of the Bangash clan, the traders and villagers of all sorts. When the Bamṭelas, who had occupied the fort at Farrukhábád heard the news, they were alarmed and fled to their villages.

After the battle Ahmad Khán sent one of his father's chelas whom he trusted, his name was Bhure Khán, with five hundred matchlockmen, to take possession of Kannauj. His orders were to occupy the fort of Naval Ráe called the Rang Mahal, and to take care of all the property. These instructions were thoroughly carried out. There were hundreds of thousands of rupees in cash, and a very large quantity of grain stored. Rahm Khán, chela, used to say that his father, Diláwar Khán, then very young, visited Kannauj a few days after the battle, and at the commander's invitation he went into the Rang Mahal. There were no people in it, but bags of rupees and gold coins were scattered about. There were gold brocade curtains, the doors and lintels were plated with silver and gold, there was a jewelled bedstead with pillows of velvet, and the basons and covers were of gold studded with jewels. Diláwar Khán lived all his life on the proceeds of the things he carried away with the ḳila'dar's permission, and at his death he left a house and a pot full of gold coins.

Nawáb Ahmad Khán returned to Farrukhábád with great splendour. Sending for the Bibi Ṣáhiba, his step mother, from Mau, he presented her with offerings. He sent out his parties to occupy posts (*thánas*) in all the thirty-three maháls, and removed from Kannauj the whole of the property he had confiscated.

A local poet, Bhabuti Bhát of 'Ataipur, parganah Ḳaimganj, produced the following ode on the occasion, for which the Nawáb gave him a village in *nánkár*.

'Ajab wuh Sáhib-i-kudrat hai, jin-ne jag samhárá hai,
Khudá hai, pák-maula hai, wuhi parwardigárá hai;
Khaṛá bandah, kamr kas-kar, ghaním upar liye lashkar
Lagi uskí 'ajab chakkar, gharúrí ká khamárá hai,
Naval se mard gházi ko na puchhí bát pájí ko,
Naval se mard ghází ko pahunch, golí se máṛá hai,

Naval haudah se mukh moṛá, kahín háthi, kahín ghoṛá ;
Ḳabáil bhi kahín chhorá na sar cherá samhárá hai,
Chalen topán dhaṛádhar se, rahklí bhi paṛápaṛ se,
Shutr-nálen taṛátaṛ se, tahavvar ká pahárá hai,
Chalen tíren sans-sans, chalí golí manan man man,
Kaṭen bakr jhanan jhan jhan, parí talwár dhára hai,
Bhabuti nám hai merá, 'Aṭaipur men derá hai
Yihi hai mo-ká-kherá, tale Gangá kinárá hai.

Advance of the Wazír.

Shortly after the first rising of the Paṭháns, word had been brought of it to the Wazír at Delhi. On the 12th Sha'ban 1163 H (6th July, 1750), he marched out of Delhi and crossing the Jumna began his preparations. On the 27th and 28th Sha'ban (21st and 22nd July, 1750), he despatched troops under Nasír-ud-din Haidar to reinforce Naval Ráe. On the last day of the month, a Tuesday (23rd July, 1750), he returned to Delhi and a second time took leave of the Emperor. He then marched with a large force of his own troops, some thirty thousand men under Suraj Mall Jáṭ of Bhartpur, whom he had taken into his pay, and contingents under Nawáb Najm-ud-daula Muhammad Isḥáḳ Khán, Darogha of the Nazúl,* Sher Jang,† Mir Nasír-ud-din Haidar,‡ Mirza Muhammad Ali Khán Kochak, and Mirza Najaf Beg.§ Ismá'il Beg Khán, chela, 'Ise Beg Khán

* His sister, in her old age so well known as the Bháo Begam of Faizábád, was married to Shuja-ud-daula, Safdar Jang's son. Najm-ud-daula, whose name was Mirza Muhammad, was the eldest son of Muhammad Isháḳ Khán Mútaman-ud-daula (died 2nd Safar 1154 H.—3th April, 1741).

† Sayyad Násir Muhammad Khán, son of Sayádat Khán, the brother of Sa'dat Khán, Burhán-ul-Mulk.

‡ He and Safdar Jang had married two sisters, the daughters of Sa'dat Khán, Burhán-ul-Mulk. He was the son of Safdar Jang's maternal aunt.

§ This is the man who afterwards played such a prominent part at the Court of Delhi from 1771 till his death on the 22nd April, 1782. He left Shujá'-ud-daula's service after the assassination of Muhammad Kuli Khán, Naib of Allahábád.

His descent and family connections are shown in the subjoined table—

Najaf Khán
m. daughter of Sháh Sulaiman.
|
Mír Saíd Muhammad.
|
Mír Saíd Ali.
|

Mirza Ismá'il m. Fátima Begam, full sister to N. Muhammad Ḳuli Khán and daughter of 'Izzat-ud-daula Mirza Muhsin, elder brother of Safdar Jang.	Mirza Najaf Khán. *b.* at Isfahán.	Daughter m. to Mirza Muhsin, brother of Safdar Jang.

chela,* Agá Muhammad Báḳir Yarmani,† Mirza Mashadi Beg and Mir Na'ím Khán.

After they had, in three or four days' time, reached two stages from Delhi, the defeat of Naval Ráe was reported. The Wazír flew into a great rage and cursed that vain-glorious drunkard for not having awaited the reinforcements, when it would not have been possible for those peasants, the Paṭháns, to have wrested a victory. Saying this he struck his hands in despair on the cushion on which he was seated, and then exhausted, dropping his head upon the pillow, he fell into extreme perplexity. Meanwhile Ismá'il Beg Khán who had been sent to reinforce Naval Ráe, having reached Mainpuri, heard from his spies of the death of Naval Ráe, and retreating at once rejoined the Wazír's main army, which was encamped near the town of Márahra.‡

Execution of the Five Princes.

When the Wazír raised his head from his pillow, he called for a secretary, and directed him to write to the Shekh in command at the Allahábád fort, directing him on receipt of the order to put to death with every indignity the five sons of Nawáb Muhammad Khán Ghazanfar Jang who were in his custody. Another order was sent to the Wazír's son, Jalál-ud-din Haidar (afterwards known as Shuja'-ud-daula), then at Delhi, telling him to decapitate the five chelas, sending their heads to the Wazír.

According to the Wazír's orders, the stony-hearted Shekh, forgetting God and God's prophet, took with him several misbegotten wretches and went to the prisoners. When these beheld their murderers, Nawáb Imám Khán said to the Shekh—"O Shekh! after the death of Ḳáim Khán I "was raised to the *masnad*, to kill me is your duty, but these four brothers "of mine are quite innocent, you should postpone their death till the "Wazír's order can be repeated." The Shekh turned a deaf ear to this

* There is a Shuja' Ḳuli Khán *alias* Miyan 'Ise, a chela, mentioned in the "Tabsirát-un-názirín" (year 1177), and in the 'Amád-us-Sa'dat (p. 88,) who may be the same as this man.

† The Tabsirát-un-názirín (year 1177), names a Mír Bákir Yamani as one of Shuja'-ud-daula's leaders in the Bengal campaign of 1764.

‡ Gaz. N. W. P. 155. It lies 12 miles north of the head-quarters of the Eta district. The lithographed editions of both the "Siyar-ul-Mutákharín, p. 875, and the Khizána 'Amira" p. 80, give distinctly the name Márahra as the town plundered by the Wazír's troops on the 18th Ramzán (10th August, 1750). But Elphinstone, p. 650 (fourth edition) says it was the town of Bárha, which might be treated as a misreading, had not Elliot, in his Supplemental Glossary (Roorkee reprint, 1860, p. 110), also stated that it was the town of Bárha which was sacked by Safdar Jang's men. I believe Márahra, however, to be correct.

request. The executioners advanced towards the prisoners, and the Nawábs competed with each other as to who should first offer up his life. When all five had been slaughtered, the bodies were buried within the fort, and it was believed that the vows were granted of any one who offered a prayer at their tomb.*

Execution of the Five Chelas.

The Wazír's order to put the five chelas to death reached Jalál-ud-din Haidar, the Wazír's son (afterwards known as Shuja'-ud-daula); and on the 20th Ramzan (12th August, 1750), he directed their jailor, Zain-ul-'Abidain, to bring them forth. He went to their prison with a *palki* and called out—"O Shamsher Khán! to-night the Wazír has ordered your "quarters to be changed, and I have brought a *palki* to carry you." The Khán replied that he knew the place to which he would be taken, and requested that the other four might go first, leaving him the time for washing the corpse and for the funeral prayers. Zain-ul 'Abidain had a great affection for him, but was unable to show it. As requested he took away the other four chelas in the *pálki*. When they reached the place of execution, an order to despatch them having been given, the executioner forthwith separated their heads from their bodies.

Meanwhile Shamsher Khán bathed, put on new clothes, rubbed them with scent, and having said the burial prayers for his own death, commenced a recitation of the Ḳurán. Then Zain-ul-'Abidain returned with the *palki* and said "O Shamsher Khán! arise and enter the *palki*." Placing his Ḳurán in its cover, he presented it to Zain-ul-'Abidain, and gave him fifty gold coins to be presented for the table of Murtazza Ali through the hands of some Sayyad. He put aside his shoes as a gift to any one going barefooted. He made over his signet ring to his attendant, telling him to deliver it to Hasan Ali Khán, his son; and his own rosary, with a *firán* to hang round a child's neck, were for Sher 'Ali Khán. Then barefooted he set out towards the place of execution. Zain-ul 'Abidain urged him to get into the *pálki*, but he refused, saying, that though many of his slaves had risen to ride in *pálkis* or on elephants, all earthly ambition for him was now over.

As he reached the place of execution, seeing the dead bodies of his fellow chelas, he exclaimed, "Brothers! I will soon follow you." Jalál-ud-

* The author of the "Amád-us-Sa'dat" (p. 45) pretends to throw doubt on the above story, but Hisám-ud-dín says he had it from Sayyad Piyári of Gwáliyár, who was living in Allahábád at the time. The more popular version is that the five Sahibzádas were built up alive into one of the walls of the fort.

din Haidar on seeing him, said, "Shamsher Khán, where is now your sword"? In reply he recited these verses—

Hamán sher o shamsher-i-burrán man-am ;
Cha sázam, kih kabza na dárad sar-am,
Wagarna turá Khán o mánat ḥarís
Ba-yak-dam tah-i-khák kardam 'adam.

Having heard this answer, the prince said to the executioner "Behead him." The executioner made a stroke but missed; and again a second time he missed. Turning to a Mughul standing by, Jalál-ud-din Haidar told him to finish the affair. The Mughul hesitated, but at length drawing, he made a cut at the neck and severed the head from the body at one blow. Still reciting the words of martyrdom, the corpse moved ten paces towards the Ka'ba and then stood still, the fingers of both hands continuing to count as before the beads of his rosary. The Mughul was amazed, and approaching the corpse, placed his two hands on its back, saying, "O Khán Sáhib! "you are a martyr." On these words being pronounced, the corpse turned to him and knelt. Then the Mughul began to weep and wail, saying, "O Jalál-ud-dín, the accursed! I knew not that this man was the greatest "saint of the age, unjustly have you murdered by my hand this man with-"out guile." Then striking his sword on a stone with such force that he broke it, and rending his clothes, he fled into desert places.

The prince then caused the five bodies to be thrown into a well, and filled it up with stones. Next morning by the power of the Almighty there were found strewn on that well five fresh *Chambeli* flowers. Every day they were replaced by other fresh flowers. At the time that Ahmad Khán Durráni came to Delhi (1761), Nawáb Ahmad Khán went there accompanied by 'Umr 'Ali Khán, son of the martyred Shamsher Khán. One day his father appeared to him, and said—"It is now twelve years since I fell "into a well here, take out my corpse and send it to Farrukhábád, there "inter it in the mosque beneath the *Jáman* tree." 'Umr 'Ali Khán got up crying bitterly, for at that time he was much hampered for money. He could hit upon no plan to procure funds. A few minutes afterwards, through the wisdom of the Causer of Causes, a money-lender, a friend of his, came up and asked why he wept. He repeated the dream, and that good man lent him five hundred rupees. Stone masons were set to work at the well, and when the corpse was taken up, the clothes looked quite whole, but were in reality all worn and fell to pieces. The body was put into a coffin and sent to Farrukhábád, where it was buried in the mosque beneath the *jáman* tree. The following verse gives the year of Shamsher Khán's death—

Táríkh ba-guft hátif-i-ghaibe kih "*núzdah Ramzán.*" 1163 H.

Defeat of the Wazír.

After having remained a month encamped at Márahra, the Wazír advanced eastwards and entrenched himself near a place called Rám Chatauni, seven miles east of Saháwar and five miles west of Patiáli.* Suraj Mall with his troops was on the Wazír's right wing nearest the van, and Ismá'il Beg Khán commanded on Suraj Mall's left.

On his side Ahmad Khán had sent urgent requests for assistance to the Paṭháns of Sháhjahánpúr, Tilhar,† Bareli, Anwalah‡ and Jaunpúr, in which last place some friends of his were settled. Ahmad Khán then marched westwards with Rustam Khán Afrídí, who at that time had the chief direction of his affairs. The Nawáb proposed to Rustam Khán that, as both the Wazír and Suraj Mall were coming against them, they should divide their forces; and he offered to Rustam Khán the choice of attack. Rustam Khán replied that Nawáb should fight with Nawáb and simple soldier with simple soldier, he therefore chose Suraj Mall as his antagonist.

Early in the morning of the 22nd Shawál 1163 H. (13th September, 1750), the attack began by the advance of the detachment of Ismá'il Khán, chela, and of Suraj Mall Ját with fifty thousand men against Rustam Khán Afrídí. On his left was an eminence, the site of a deserted village.§ Ismá'il Khán and Suraj Mall occupied the foot of this height, and planted several guns on the top of it, the fire of which commanded the camp of Rustam Khán. He went off to the Nawáb and asked for orders to attack. Ahmad Khán wished the battle postponed, but Rustam Khán pointed out that delay was impossible, and the enemy being in force he must meet them. He got into his *pálki* and returned to his men, whom he drew out at once in order of battle.

When the order to advance was given, the Paṭháns by one rush carried the height, sword in hand, and captured the guns. Rustam Khán then discovered at a little distance a large force drawn out in battle array. He directed the attack to be continued. It was Suraj Mall's contingent under his immediate command. Suraj Mall called to his men, "You must not

* Rám Chatauni is not marked on any map to which I have access, but I believe it lies within Taluka Mohanpur. There is a well there which is believed to have existed from the time of the Vedas, and once a year thousands of Hindus assemble there to bathe.

† About 12 miles N. W. of Sháhjahánpúr.

‡ Fifteen miles S. W. of Bareli and in the Bareli district.

§ The authors of the "Lauḥ" say that the final struggle with Rustam Khán took place at Atranji Khera (see Gaz. N. W. P. IV, III.) But as it is 14 miles off as the crow flies from Rám Chatauni, and on the opposite or right bank of the Káli Nadi, I think they must be wrong.

"fight these Paṭháns with the sword, at which they are expert, let fly your "arrows and discharge your firelocks." Saying this he withdrew to consult Ismá'il Beg Khán and Rájáh Himmat Singh Bhadauriya,* who were stationed to the rear by way of reserve. They also were of opinion that the Paṭháns should not be allowed to come to close quarters, but that they should all three join to enclose them on left and right. They then advanced against Rustam Khán in a semicircular form, something like the shape of a bow.

They began their attack by artillery fire, discharge of matchlocks, and flights of arrows. Rustam Khán, who was brave as his name, got out of his *pálki* and joined his Paṭháns, with his bow in his hand. His arrows shot down several of the enemy. Then grasping his sword he advanced followed by his men, who had all dismounted. They despatched a number of the enemy, nor did they fail in any effort to win the day. They were, however, outnumbered, and Rustam Khán was slain with six or seven thousand Paṭháns. Suraj Mall and his companions pursued the remainder a long way in the direction of 'Aliganj, which is twenty-four miles south-east of the battle field.

Meanwhile, some *kos* to the right of Rustam Khán, Nawáb Ahmad Khán was engaged in contest with the Wazír. A messenger came and whispered to him that Rustam Khán had been defeated and slain. Allowing no sign of fear to betray itself, he turned with calmness to his leaders and cried with a loud voice :—"Rustam Khán has gained the day and has "made prisoners of Suraj Mall Ját, Ismá'il Beg and Rájáh Himmat Singh,

* Himmat Singh Bhadauriya, son of Gopál Singh, succeeded his father on Jeth S. 2nd Sambat 1800, (1743 A. D.) He died on Jeth B. 5th Sambat 1812, (1755 A. D.) His principal forts were Báh and Pináhat in the Agra district, Aṭer on the right bank of the Chambal, and Bhind some sixteen miles beyond it to the south-east. The two latter places are now in the Gwáliyár State. The family residences are now at Kachora and Nauganw, both on the Jamna in the Báh Pináhat parganah of the Agra district The Rájáh's *diwán* gives the following genealogy :

Himmat Singh (son of Gopál Singh).
|
Bakht Singh.
|
Partáp Singh (adopted son)
|
Sarnet Singh.
|
Mahindar Singh (adopted son)
(present Rájáh).

The Bhadauryas are said to be a branch of the Chauhans (Elliot, Supp. Glossary art. Bhudouria, p. 75.)

"he will win the palm for bravery from us, let us advance and make a like "brave fight; we have the Wazír to meet, and if we prevail our name will "be great, if we fail, not one of us will be able to look a stranger in the "face." The leaders replied that, by the favour of God Most High and the Nawáb's good fortune, they would soon show what they could do. Hearing these words repeated by the whole army, the Nawáb directed them to offer up a prayer. Raising up the right hand, they all called upon God for his blessing and made over their lives to his care. Then rank by rank they turned upon the foe.

When the two armies met in line, Nasír-ud-dín Haidar, who was posted in advance on the enemy's side with several thousand men, attempted to open an artillery fire. The advance of the Paṭháns was, however, so rapid that little or no execution was done. When they came close, Musṭaffa Khán Mataniya, who was famous among all the Paṭháns for his prowess in single combat, challenged the leaders on the other side. Nasír-ud-dín Haidar came forth to meet him. Drawing their swords, they began to fight; both fell from their horses, owing to the number of their wounds, and both expired upon the spot. The enemy, seeing that Nasír-ud-din Haidar was dead, gave up hope, turned, and fled. At this moment Nawáb Ahmad Khán came up to where Nasír-ud-din Haidar and Musṭaffa Khán's dead bodies were lying.

The want of success in the Wazír's vanguard is attributed to the defection of Kámgár Khán Biloch, faujdár of the environs of Delhi. Acting, as it is asserted, in collusion with Ahmad Khán, he made no resistance but turned and fled. When the Wazír perceived that his men were giving way, he hurried off Muhammad 'Ali Khán Risáldár and Núr-ul-Hasan Khán Jamá'dár, Bilgrámi,* with his brothers, and 'Abd-un-nabi Khán, chela of Muhammad Ali Khán, with orders to re-inforce the front. Since, however, the panic of the Mughuls had become general, the efforts of the newly arrived troops were fruitless. Muhammad 'Ali Khán then turned away to their left wing, where three thousand foot were drawn up, with some horsemen behind them. When the Paṭháns came to close quarters, Núr-ul-Hasan and his brothers began using their bows, and the matchlockmen under 'Abd-un-nabí Khán fired off their pieces. They picked off many of the Paṭháns, who were thrown into slight confusion, but soon recovered themselves. Their advance continued, Muhammad 'Ali Khán was wounded by a bullet on the right hand, and Núr-ul-Hasan Khán's elephant received five

* Núr-ul-Hasan Khán was still alive in 1181 H. (May, 1767-1768), and serving near Arrah in Bengal, see *Tabsirat-un-Názirín* under that year.

sword cuts. In this encounter were slain Mír Ghulám Nabi and Mír 'Azím-ud-din, Sayyads of Bilgrám.*

As soon as Nawáb Ahmad Khán reached the field of battle, the Mughuls discharged their artillery, great and small, loaded with spikes (*gokhrú*) and broken iron instead of balls. From the noise the earth trembled but the execution done was small. No one was wounded except Parmúl Khán, who lost the skin of one finger. From the spreading of the smoke the sky was obscured and for a time it was quite dark.†

Nawáb Ahmad Khán waited a few moments till the smoke had subsided, when he made a rapid advance through some *dhák* jungle upon the Wazír's entrenchment. The horsemen having dismounted drew their swords and preceded the Nawáb. By voice and by signs with his bow, he urged on the kahárs to carry his *pálki* speedily into the midst of the enemy. When the Paṭháns got near the guns, they fired their matchlocks and drove off the artillery-men, and the chains protecting the camp they cut with their swords or with axes. They now had got near to where the Wazír stood with a large force, and the Paṭháns began the attack on him with a discharge of musketry and arrows. The Nawáb at the head of the reserve came up and joined them. With his own hand he discharged his arrows, aiming at the Wazír, and the Paṭháns so exerted themselves with their swords that there was a general slaughter, and corpse fell upon corpse. At this moment a Paṭhán from Tilhar‡ in Rohilkhand came up towards the rear of the Wazír's position, and finding an action going on, sent a camel rider for orders. He was told to make his way towards the canopied *howdah* in which sat the Wazír; and the troops being few in that direction, where no attack was expected, the Tilhar Paṭhán, with his three hundred men, forced their way close to the Wazír and discharged their matchlocks.

The Wazír's elephant-driver was shot and fell to the ground; his companion in the hind seat, Mirzá 'Ali Naḳi, tutor of Shujá'-ud-daula, the Wazír's son, was wounded; and the Wazír himself received a grazing wound

* The *Miftáh-ut-tawárikh*, pp. 497, 498, gives poetical *tarikhs* by Mír Ghulám 'Ali Ázád, who also mentions them in the "*Sarv-i-Ázád.*" The father of the author of the *Siyar-ul-Mutákharin* would seem to have been present in this battle. S-ul-M. p. 877, seventh line from bottom.

† The *Khizána 'Amira*, p. 81, says nearly all the artillery had been sent away with the van, but this does not seem quite borne out. At any rate this smoke from the artillery seems to be the explanation of the dust storm usually pleaded as a screen for the Wazír's defeat, see Life of Hafiz Rahmat Khán, p. 38, Hamilton's Rohilla Afghans, p. 103. First, a dust storm does not come in September, secondly, it would come from the West and would blow into the Paṭhán's faces, and so far be favourable to the Wazír, who faced to the east not to the west.

‡ In the Sháhjahánpúr district.

on the neck, under the right jaw, from which he swooned and sank down in the *howdah.* His *howdah* was made of strong metal plates, and it was so high that when seated the head only appeared above the side, he was thus protected from further wounds. The Paṭháns, thinking the *howdah* empty and the elephant ownerless, passed on in pursuit of the Mughuls, who had by this time taken to flight; only Muhammad 'Ali Khán and Núr-ul-Hasan retained their formation, and rejoining the Wazír they asked for orders. He directed a triumphal march to be beaten by the drums, but except some two hundred men, not a soul rallied to his support. Night now approaching, Jagat Náráyan, brother of Lachmi Náráyan, took the place on the elephant of the dead *mahaut;* and the Wazír reluctantly withdrew from the field towards Márahra.

Soon after his withdrawal, Suraj Mall Ját, Ismá'il Beg and Ráját Himmat Singh, having completed the defeat and dispersion of Rustam Khán Afrídí's troops, were returning with exultation to rejoin the Wazír. Nawáb Ahmad Khán with only a few men was in occupation of the Wazír's camp. When he saw this large force advancing, he became very anxious and turned his face to the Great Helper and prayed, saying, "O God! pre-"serve this sinful slave from calamity." It was not long before the three leaders received reports of the repulse of the Wazír. Their joy being changed into fear and trembling, they turned and marched off towards Delhi, and Nawáb Ahmad Khán offered up thanks to heaven. Meanwhile those who had pursued the Wazír's retreating troops, had come up on the road with Nawáb Isháḳ Khán, who cried out boldly, "I am 'Abd-ul-Mansúr Khán." Believing his words, the Paṭháns surrounded the elephant, and seizing the Nawáb, cut off his head. They brought it and threw it at the feet of Nawáb Ahmad Khán, saying, "Here is the head of the Wazír." Looking at it the Nawáb saw it was the head of Isháḳ Khán, not that of the Wazír.

The night after the battle was spent by the Wazír at Márahra, twenty-one miles west of the field, and there his wound was dressed. On the 29th Shawál (20th September, 1750), he re-entered Delhi and repaired secretly to his house. Through the intrigues of the Emperor's favourite, Jáwed Khán, it had been already proposed to confiscate Safdar Jang's estate and to appoint in his place Intizám-ud-daula, Khán Khánán, a son of the late Wazír, Ḳamr-ud-dín Khán 'Itimád-ud-daula. On hearing of the defeat and disgrace of Safdar Jang, the Emperor consulted Ghází-ud-dín Khán, Fírúz Jang, son of Nizám-ul-mulk, as to what should be done if Ahmad Khán advanced to Delhi. After obtaining permission to speak his mind freely, Fírúz Jang stated the case at great length, dwelling on the good services of the Bangash family and the treachery they had met with from the

Wazír. He concluded by desiring the Emperor to decide who, in justice, was in fault. The Emperor admitted that what Fírúz Jang said was true, that Muhammad Khán Ghazanfar Jang and his family had done the throne no wrong, that Safdar Jang's conduct could not be defended. But if Ahmad Khán followed up his advantage and pursued Safdar Jang to Delhi, what should be done? Fírúz Jang proposed sending a *farmán*, with a robe of honour, elephant, horse and sword to Ahmad Khán, at the same time stating that what had been done had not been done with the Emperor's consent. Safdar Jang had no more than reaped the fruit of his own ill-deeds, but Ahmad Khán, if he were a loyal subject should, instead of advancing further towards Delhi, return to Farrukhábád. This advice approved itself to the Emperor, a *farmán* and robe of honour were sent, and on receiving them, Ahmad Khán turned and went back to Farrukhábád.

Shádil Khán, brother's son of Shuj'at Khán Ghilzai,* was left with some ten thousand men under subordinate leaders, in charge of that part of the country, it having been formerly under his uncle, Shuja't Khán.† Nawáb Ahmad Khán himself then returned to his home at Farrukhábád. For the due administration of the recovered territory, he appointed his brothers and relations to be governors of various places. Nawáb Murtazza Khán, fourth son of Muhammad Khán, was sent to Iṭáwah; Mansúr 'Ali Khán, thirteenth son, to Phaphond, including the jágír maháls of Saurikh, Sakaṭpur, Sakráwah, and Sauj; 'Azim Khán, twenty-first son, to Shikohábád, including Sakíṭ, Kuráoli and 'Alipur Khera; Nawáz Khán Khaṭak to Akbarpur-Sháhpur; Zu'l-fiḳár Khán, chela, *alias* the Majhle Nawáb, to Shamsháhád and Chibramau, including Sikandarpur, Bhonganw and Birwar (or Bewar); Manavar Khán, eighteenth son, to Páli and Sándi; and Khudá Bandah Khán, twelfth son, was made Faujdár of Bilgrám. Nawáb Mahmúd Khán, eldest son of Nawáb Ahmad Khán, with Jahán Khán, an old chela of the family, at the head of ten thousand horse and a large force of infantry, was deputed to take possession of Lakhnau and the Súbah of Audh.‡ At the same time Shádí Khán, the sixteenth son, with the assistance of Káli Khán son of Shamsher Khán, chela, was ordered to advance to Koṛah—Jahánábád, in the Súbah of Allahábád; and Muhammad Amír Khán, nineteenth son, was sent to occupy Ghazipur. The Rohelas on their side§ sent Shekh Kabír, Par-

* See p. 383, Vol. XLVII, 1878.

† Gaz. N. W. P. IV, 158, Shuja't Khán built at Márahra the tomb of Sháh Barkat-ullah in 1142 H. (July 1729—July 1730).

‡ The *Khizána 'Amira*, p. 83, must either be wrong in the date (Jamádi I, 1164 H.) given for Mahmúd Khán's passing through Bilgrám, or else it must refer to something which happened on the retreat from Allahábád to Farrukhábád, which did take place about Jamádi I, 1164. It is absurd to suppose that Aúdh was not occupied till six or seven months after the victory of Rám Chatauni.

§ Life H. R. K., p. 39.

múl Khán, and other leaders with their respective contingents to Sháhábád and Khairábád, of which parganahs they took quiet possession. The death and defeat of Naval Ráe had thrown the greater part of the Allahábád Subah into confusion; Rúp Singh Khíchar, who held parganah Karáli (now in the Allahábád district), Sumer Singh, son of Hindú Singh Chandela, and Ganshám Singh Raghbansi, all old friends of the Paṭháns, entered into a league with the Mahrattas, and as they had done the year before, wished to call them across the river.

By the month of Zíl-ka'd (Sept.—Oct. 1750), the Paṭháns had put a *thana* in Malihábád, 15 miles west of Lakhnau, had raised a disturbance in Sándi, (in the Hardoi district) had invested Amethí (in the Sultánpur district), and with a large force were threatening Dálmau, on the Ganges, and Ráe Bareli itself.

It is reported that after the victory Nawáb Ahmad Khán used often to say to the Bíbí Sáhiba—"God the Almighty has granted me a double "triumph, for I have not only defeated 'Abd-ul-Mansúr Khán, but I am rid "of Rustam Khán Afrídí, who had a claim to half my territory." The Nawáb referred to the compact made before the attack on Naval Ráe, by which Rustam Khán had stipulated for half the *nawábi* in return for the money then advanced.

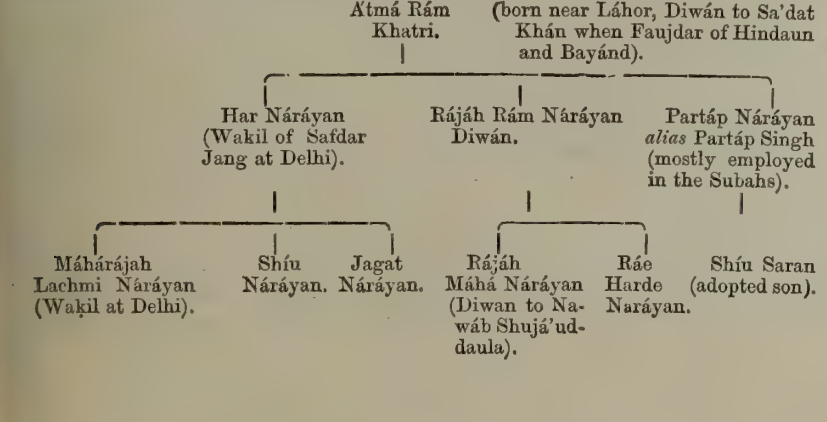
Siege of Allahábád Fort.

(September, 1750—April, 1751.)

Nawáb Ahmad Khán after having made all his arrangements went in person to Kannauj. Hearing of his approach Nawáb Baḳá-ullah Khán, Khán 'Alam, Amír Kháni* and Ráe Partáp Náráyan,† officers in the Wazír's

* He was the son of Marahmat Khán, son of Amír Khán 'Alamgírí, his uncle being the well known Amír Khán 'Umdat-ul-Mulk, whom we mentioned at p. 338, Vol. XLVII, 1878.

† The family tree of this family is given thus in the *Amád us-Sa'dat*, p. 56. copying from the *Hadíkat-ul-Akálím*.



service, who at the head of nine hundred or a thousand men had arrived as far as Kannauj on their way to join their master, retreated by way of Lakhnau to Jhúsi. Then 'Ali Kuli Khán Karkhi, the deputy in the Allahábád Subah, came out to meet them.* There they heard that Shádi Khán was marching down country at the head of twenty thousand men. 'Ali Ḳuli Khán with his own troops and part of those of Ráe Partáp Náráyan advanced to oppose Shádi Khán. The two armies met each other at Koṛá-Jahánábád† where a battle ensued, and Shádi Khán having been defeated began to retreat.

When this news was brought to Nawáb Ahmad Khán, he proposed to send large reinforcements, but his chief counsellors overruled him, and advised his proceeding in person, hoping that the fort of Allahábád would be evacuated at his approach. Nawáb Baḳá-ullah Khán and 'Ali Ḳuli Khán, hearing of Ahmad Khán's advance, beat a rapid retreat, and took refuge in the fort of Allahábád. Ahmad Khán when he had reached Koṛá halted several days, and intended to return home himself, leaving the fighting to Mansúr 'Ali Khán,‡ Rustam Khán Bangash, and Sa'dat Khán Afrídí, brother of Mahmúd Khán, Bakhshi to Nawáb Ḳáim Khán, these three leaders having a large force in their pay. But he was persuaded to go on by the arrival of wakíls from the eastern Rájáhs, Pirthipat, son of Chattardhári, son of Jí Sukh, Sombansi, ruler of Partábgaṛh,§ and Rájáh Balwant Singh of Banáras. The agents were introduced through Mustajáb Khán Warakzai and Háji Safaráz Khán, who were then in attendance. The letters were to the effect that if the Nawáb would continue his advance to Allahábád, they undertook to obtain the fort for him in a very short time, after that the whole of the eastern country would fall into his power. After receiving these letters the Nawáb went on towards Allahábád, and

* The Khizána Ámira, p. 83, distinguishes this 'Ali Ḳuli Khán from 'Ali Ḳuli Khán Dághistani, poetically Wálih, but the local historians, Wali-ullah and the "Lauh" make them one and the same. Mir Ghulám 'Ali is the most likely to be right, as he was acquainted personally with the poet Wálih, Hisám-ud-din calls this man simply the "Allahábádí," and the "Siyar-ul-Mutákharín," p. 879, says he had been in the service of Sayyad Muhammad Khán, náib of the Allahábád Súbah on the part of 'Umdat-ul-Mulk Amír Khán. Káli Ráe in the *Fatehgarh-náma* (p. 54,) refers to the author of a book called the *Haft Aklím*, who states that he was present in this retreat from Lakhnau. The reference is, I now find, to the *Hadikat-ul-Akálím*.

† On the Grand Trunk Road, some thirty-four miles north-west of the town of Fathpur.

‡ Thirteenth son of N. Muhammad Khán.

§ Or as Hisám-ud-dín says, Azimgarh. Partábgaṛh lies thirty-two miles north of Allahábád. There is a capital account of the family in the *Hadikat-ul-Akálím* under the head, *Partabgarh* in the Second Clime.

Ráják Pirthipat, marching from Partábgarh, brought his army to the edge of the Ganges, where he encamped. On the Nawáb's arrival he crossed the river and paid him a visit, when he was presented with a *khila't* and at his own request he was posted to the vanguard.

Reaching Allahábád the Nawáb appears to have crossed over to Jhúsi on the other or left bank of the Ganges, where he planted his guns on the high ground known as the fort of Ráják Harbong.* The whole of Allahábád from Khuldábád up to the fort was burnt down and plundered, and four thousand women and children were made prisoners. Nothing was spared but the abode of Shekh Muhammad Afzal Allahábádí and the quarter of Daryábád which was entirely occupied by Paṭháns.†

The defence of the fort on the part of the Wazír was conducted by Baḳá-ullah Khán and 'Ali Ḳúli Khán, Zárjí. By chance one Indargir Sunyási‡ had come there on a pilgrimage with five thousand naked fighting *fakirs*, who lay between the old city and the fort. These took the side of the Wazír's people. Baḳá-ullah Khán, who was an able man and experienced in war, threw a bridge over the river between the Beni (properly Tribeni) gate of the fort and the town of Aráil, which is on the right bank of the Ganges just below its junction with the Jumna. He left his camp standing in that town, while morning and evening he marched his troops to and from the fort. All day an artillery fire was kept up from the walls upon the troops of Nawáb Ahmad Khán. On his side the leaders, Ráják Pirthipat and others, made every effort to carry the fort but without success.

At this time Ráják Bálwant Singh, who had been directed to appear in person, arrived at Jhúsi.§ He was introduced through the Nawáb's son

* Elliot's Supplemental Glossary, p. 466, "Harbong ká ráj."

† Khizána 'Amira, p. 83.

‡ Ráják Indar Gír was a Sunyási from Jhánsi in Bundelkhand. He had seized parganah Moth (in the Jhansi district) in 1745, and building a fort there soon acquired possession of 114 villages. About 1749-50 he was ejected from Moth by a force under Narú Shankar, the Mahratta *Subah*, and he then found his way to Allahábád. (Jenkinson's Jhansi Report, pp. 172 and 173). After the raising of this siege, he was introduced to the Wazír by Baḳá-ullah Khán, and accepted service on two conditions (1) that he might beat his kettle-drums when in the Wazír's retinue, (2) that in audience he should not be obliged to put his hand to his head. He took part in the Rohilkhand campaign and was killed in Rajab 1165 H. (4th May 1752—2nd June 1752), in the fighting between Safdar Jang and 'Amád-ul-Mulk. The "Life of Háfiz Rahmat Khán," p. 49, says Najíb Khán killed him with his own hand. In the year 1762 we shall come across his chelas and successors, Anúp Gir Himmat Bahádur and his brother Umráo Gir.

§ At Jhúsi is the tomb of Sháh Muhammad Taḳí, a descendant of Hazrat Ghaus-ul-islám, Miran Hamíd-ud-din, Muhammad Ghaus, Gwáliyári.

Mahmúd Khán, who not long before had arrived from Lakhnau. The Ráják made a present of one lakh of rupees and received a *khila't* with a confirmation of half his territory, the other half being put under Sáhib Zamán Khán, Dilázák of Jaunpur, cousin to one of the Nawáb's wives.* Nawáb Ahmad Khán told the Ráják to cross over to Aráil with Mahmúd Khán, and encamp there after driving away Baḳá-ullah Khán's men, in order to put an end to the passage to and fro of troops to the fort, and to interrupt the arrival of supplies. The Ráják agreed to the proposal and returning to his camp at Jhúsi he sent in all directions for boats.

When their spies reported this to Baḳá-ullah Khán and the other leaders of the enemy, they began to consult how they could prevent the danger of an attack from two sides. They decided that the next day they would fight the army in front of them. Accordingly Baḳá-ullah Khán came across the bridge with a large force and the troops coming out of the fort joined him. Indargír Sunyási also receiving orders to join, advanced beyond the shelter of the fort and drew up in battle array from the Ganges bank to a point between the old city and the fort.

As soon as he heard this, Nawáb Ahmad Khán mounted and advanced to the edge of his camp. Thence he deputed Nawáb Mansúr Ali Khán† and Nawab Shádi Khán‡ to take the command, and they at once commenced an advance. Besides their own men they had with them 10,000 men commanded by Rustam Khán Bangash, 4000 under Sa'dat Khán Afrídí, 2000 under Mangal Khán, 3000 *Yakka* (men riding their own horses) under Muhammad 'Ali Khán Afrídí and 2000 under 'Abd-ur-rasúl Khán, chela. There were besides other leaders such as Námdár Khán, the brother of Nawáb Ghairat Khán, Núr Khán, son of Khalíl Khán Mataniya, Námdár Khán, brother of Himmat Khán Mataniya, and 'Abdullah Khán Warakzai The Nawáb ordered all these leaders to advance with their men and drive back the enemy. To Ráják Pirthipat he said—"The van is yours, repair to your post."

The Ráják then headed the attack and the battle began. For three hours cannon, rockets and muskets never ceased their uproar. At length Ráják Pirthipat, who was in front, got the advantage and made his way up to the enemy's ranks. Seeing this, Mansúr 'Ali Khán and the other leaders advanced rapidly to his support. The Ráják dismounted from his elephant and got upon his horse. His companions then left their horses and drawing their swords rushed at the enemy. On reaching the spot,

* The *Balwant Náma* of Khair-uddin Muhammad, translated by F. Curwen, Allahábád, 1875, pp. 25-29.

† Thirteenth son of N. Muhammad Khán.

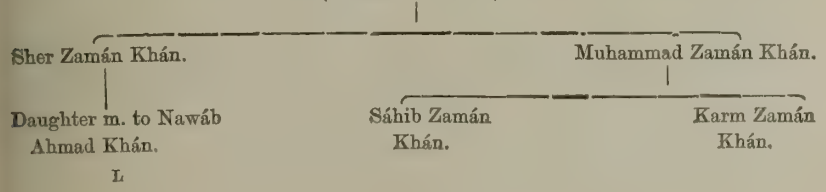
‡ Sixteenth son of N. Muhammad Khán.

Mansúr 'Ali Khán got down from his elephant, and went forward in front of the Ráják. The best of Baḳá-ullah Khán's men were slain or wounded; and Nawáb Baḳá-ullah Khán, seeing that the day was lost, withdrew his men across the bridge. The artillery-men left their guns, came out of the fort, and retreated across the bridge. The bridge was then broken up at the other end by the retreating enemy. Nawáb Ahmad Khán's army thus gained the victory and occupied the field of battle.

From the spot where they had halted, the bridge was in full view. At the time the fight began, Sa'dat Khán Afrídí had led his men against the enemy in advance of Mansúr 'Ali Khán's position. When Mansúr 'Ali Khán's men saw this, in a spirit of emulation, they also ran forward and took the lead. Among these Hisám-ud-din says he himself was present, being then attached to Mansúr 'Ali Khán's force. After the victory Sa'dat Khán and Hisám-ud-din were standing near the breastwork *(safíl)* of the fort, where the bridge could be seen in detail. They wished to advance to the head of the bridge. Ráják Pirthipat was of the same advice. But when Nawáb Ahmad Khán heard of the victory, he at once sent a camel-rider to recall Nawáb Mansúr 'Ali Khán; for to advance further would only be to strike one's head against stone walls. On receiving these orders, Mansúr 'Ali Khán turned to retreat. Pirthipat said to him that apparently the fort had been evacuated; if they marched to the bridge head, any one left in the fort would certainly fire on them; if they were not fired on, they would know that the fort was empty and could then occupy it. Mansúr 'Ali Khán said he could not go forward against orders, and ordering his drums to beat in honour of the victory, he returned to the Nawáb's presence, where with the other leaders he presented his "*nazar.*"

While the siege was going on, Ahmad Khán had appointed Sáhib Zamán Khán, Dilázák of Jaunpur, to be his viceroy in Jaunpur, 'Azimgarh, Mahaul, Akbarpur, and other places.* Balwant Singh refused to give up the territory, and urgent orders were sent to Sáhib Zamán Khán to expel

* The Dilázák Pathans had been settled in Jaunpur from the time of Muhammad Sháh (1719—1749). Their connection with Ahmad Khán is shown thus:—



him. Some reinforcements were sent to him and he was joined by Akbar Sháh, Ráját of 'Azimgarh, and Shamsher Jahán, zamindar of Mahaul, twenty-three miles north-west of 'Azimgarh. The army was assembled at Akbarpur,* and the small fort of Sarhanpúr near the camp was taken after a siege of fifteen days. An advance was then made against Jaunpur, and after six hours' fighting the assailants effecting an entrance made themselves masters of the place. Sáhib Zamán Khán still delayed his advance, and turned off towards Nizámábad, thirty-two miles north-east of Jaunpúr. After the compromise with Balwant Singh already related, Sáhib Zamán Khán with Hájí Sarfaráz Khán advanced to take possession of the country north of the Ganges. Not long after this Ahmad Khán, on the approach of Safdar Jang and the Mahrattas, beat a retreat to Farrukhábád. Balwant Singh then marched from Gangápur, some miles west of Banáras, to Mariáhú, twelve miles south of Jaunpúr, and made a demand on Sáhib Zamán Khán for a return of the territory. The contending parties met in battle array, when Balwant Singh's Afghán leaders refused to fight against their fellow-countryman, Sáhib Zamán Khán, now that his power was gone. Balwant Singh thus found it advisable to negociate. Sáhib Zamán Khán then pitched his tent at Chandipur, and next day, a riot about arrears of pay having broken out, he started alone for Azimgarh. Balwant Singh then plundered his house. Not feeling safe in Azimgarh, Sáhib Zamán Khán went on to Bettiah,† where the Ráját gave him shelter. After some time he returned to Jaunpur and was reinstated by Balwant Singh. On his death he was succeeded by his sons, but they were not men of any mark.‡

The story goes that, when the approach of the Paṭháns was heard of in Banáras, the leading money-lenders went out as far as Phúlpur, some eight *kos* or more from Banáras, and offered a tribute of two *krors* of rupees on condition that the Paṭháns did not enter their city. Even in a dream, they said, if they saw a Paṭhán a long way off, they began to tremble. The two *krors* were accepted and the Paṭháns retraced their steps.§

Siege of Fatehgarh and flight of the Nawáb.

The Wazír after his defeat at Rám Chatauni returned to Delhi on the 29th Shawál (20th September, 1750). He found the Emperor had been put strongly against him. He was much cast down and for many days never left his private apartments, passing most of the day reclining with his hand over his face. At length his wife roused him to exertion and

* Perhaps the Akbarpur in the Faizabad district about 48 miles north of Jaunpur.

† Across the Gandak river in the Champáran district.

‡ Curwen's translation of the Balwantnamah, pp. 25-29.

§ 'Amád-us-Sa'dat, p. 50, from line 1.

promised him all the money she possessed. Thus encouraged he sent for Ráját Nágar Mall, Lachmi Náráyan, and Isma'il Beg Khán. The latter advised waiting for an army from Afghánistán. Nágar Mall proposed calling in the Rohelas, who, owing to the attack on them by Ḳáim Khán, bore ill-will to the Farrukhábád Paṭháns. The Wazír rejected this advice, saying that though Paṭháns might fight amongst themselves, they would always unite against any third person. He then asked Lachmi Náráyan for his opinion. In reply he called attention to the large force of 70,000 or 80,000 Mahrattas, under Jai Ápá and Mulhár Ráo, then in the neighbourhood of Kotáh,* and reminded the Wazír that the Paṭháns started at the sound of the Mahratta name, and that one thousand Mahrattas could dispose of ten thousand Paṭháns. The Wazír determined to invoke the aid of the Mahrattas.

The next important point was to effect a reconciliation with the Emperor. For this purpose Jugal Kishor was sent to ask help from Nawáb Názir Jáwed Khán, the Emperor's favourite eunuch. After he had heard the full details of the Wazír's case, the Nawáb Názir said the matter could only be discussed in a personal interview. On Wednesday he would ride out to pray at the shrine of the saint, Sultán-ul-Musháikh Nizám-ud-dín. On his way back he would come to the Wazír's house, when he would state the obstacles to a settlement. Jugal Kishor returned and reported these words to his master. On the Wednesday, after paying a visit to the shrine of Nizám-ud-din, Jáwed Khán came privately to the Wazír's house. After other conversation, the Názir said to the Wazír that the Emperor's mind had, in an extreme degree, been turned against him, nor could any remark favourable to him be ventured on in the Emperor's presence; and Nawáb Firúz Jang was so strenuous in support of Nawáb Ahmad Khán, that no one dare open his mouth to say a word to the contrary. The Wazír said some words easy to understand (*karíb-ul-fahm*, *i. e.*, offered a bribe, I suppose) to the Názir, asking his intercession with the Emperor and using at the same time powerful arguments. The Nawáb Názir professed himself convinced, and promised that when he saw a chance he would speak in Safdar Jang's favour and, please God, he would turn the Emperor's heart towards him. He then rose, mounted, and went home.

Three days afterwards a news-letter came from the writer attached to Ahmad Khán's camp. He wrote that the eastern zamindars, Ráját Pirthipat, Ráját Balwant Singh and others, had brought treasure and had submitted themselves to Nawáb Ahmad Khán; they had joined him in laying siege to Allahábád, which would shortly fall; a large army had collected and was gathering strength every day, a hundred thousand horsemen and number-

* On the Chambal, 195 miles S. W. of Agra, and 260 miles from Delhi.

less footmen had gathered under the Nawáb's standard ; and it remained to be seen what would be disclosed from behind the curtain of the unknown after the fort of Allahábád had fallen. The Nawáb Názir seized the moment and began to repeat, as had been agreed upon, the speeches made to him by the far-sighted Wazír. The Názir described in touching language his great perplexity at the aspect of affairs, which had quite deprived him of sleep. Before Safdar Jang came back to Delhi after his defeat, Firúz Jang had caused a congratulatory *farmán* to be addressed to Ahmad Khán confirming to him his ancestral dominions. Not content with this gracious act, he had without orders occupied estates directly under the crown (*khálsa*), he had sent his son to take the Súbah of Audh, and now himself was besieging Allahábád. The next attempt would be upon Bengal. The letter writers had already informed his Majesty in detail of the immense army which had been collected. Now the learned declare that the *Akhún Darweza*, written by the spiritual head and high priest of the Afghán race, prescribes that any Afghán at the head of more than twelve thousand men is required and bound to claim complete sovereignty. In that case, Ahmad Khán, who had one hundred thousand men and a territory equal to nearly four or five Súbahs, could not possibly refrain from proclaiming himself king.

When Názir Jawed Khán had got this length in his artful representation, his Majesty became perplexed and asked him the best way out of the difficulty. The Názir at once proposed a pardon of Safdar Jang's misdeeds, the task of reducing Ahmad Khán to subjection being then committed to him. The Emperor objected that nothing could be hoped from Safdar Jang, for, although he had gone with a large army provided with cannon and rockets, he had been overthrown by Ahmad Khán with a very small force. Now that Ahmad Khán's strength had much increased, how could Safdar Jang with the same dispirited troops attempt to oppose Ahmad Khán. There is a proverb *Zadah rá báyad zad*, *i. e.*, Beaten once will be beaten again.* The Emperor continued that to his mind the Názir's device was the poorest of the poor (*khám dar khám*), and he declined to accept it, for a good scheme should have no such obvious drawback. In reply to his Majesty, Názir Jáwed Khán said that he had a plan within his plan, for Mulhár Ráo and Ápá Sendhia, who were at that time encamped in the Rajpút country, though they were his enemies, would, if sent for, enter his Majesty's service ; and hoping for benefit to themselves, they would be certain to carry out faithfully any orders given them. Suraj Mall Jat's forces also, though they were present with Safdar Jang, had not been scattered or defeated. There was also Háfiz Rahmat Khán, head of the Rohelas, who was a great friend of Safdar Jang. At length the Emperor gave way to Jáwed

* Roebuck, 1214.

Khán's persuasions, and ordered him to tell Safdar Jang that his faults were forgiven, and that the next day he should present himself for an audience. Jáwed Khán repaired joyfully to his house, and at night he went to the Wazír. After they had embraced, the whole of the conversation with the Emperor was repeated. Then the Názir taking with him Jugal Kishor returned to his home, where he told Jugal Kishor to inform the Wazír that the next day he must present himself to obtain audience, and a list of the *nazarána* must be prepared at once, the amount not being less than twenty-five lakhs of rupees. Jugal Kishor returned and reported to the Wazír, who said that this amount of *nazarána* had been fixed in his interview with Jáwed Khán.

Early the next day the Emperor left his private apartments, and entering the public hall of audience seated himself on his marble throne. The great nobles and high officials, with the Mir Túzak, having presented themselves and made obeisance, took up position according to their rank. Then Názir Jáwed Khán was ordered to go out to meet the Wazír, Safdar Jang, and bring him to his Majesty's presence. When Jáwed Khán reached the Wazír's house, thirty trays of jewels and rich clothes were placed before him. After making the customary protestations of refusal, he accepted them. They then proceeded to the presence, and Safdar Jang touched the Emperor's foot with his forehead. The Emperor lifted his head and clasped it to his breast. The Wazír said, "I have committed great faults, but "I hope for forgiveness, as Sa'di says

"Bandah hamán bih kih 'z taḳsír-i-khwesh
'Uzr ba dargáh-i-khudá award;
Warna sazáwár-i-khudáwandesh
Kas na tawánad kih bajá award."

The Emperor replied "I have after reflection forgiven you, and accept "your excuses." A dress of honour of ten pieces, jewels, a horse out of the Emperor's stable, a sword, and an elephant were granted to the Wazír. Safdar Jang then presented his list of *nazarána*, amounting to twenty-five lakhs of rupees. He then took his leave and with great joy set out on his way home, distributing fifty thousand rupees in alms as he went.

In accordance with Nazar Jáwed Khán's proposal, an imperial *farmán* was issued to Mulhár Ráo* and Ápá Sendhia.† The bearer of it, Rám Náráyan,‡ found the Mahrattas two marches this side of Kotah, which is

* Rose to notice in 1724, died 1767-8. Grant Duff, 212 and 338.

† Succeeded his father Ránoji about 1750, was assassinated in 1759. Grant Duff, 270 and 310.

‡ Hisám-ud-din says Jugal Kishor went. The Siyar-ul-M, p. 88, names Jugal

two hundred and sixty miles south of Delhi. At first, Ápá Sendhia demanded two *krors* of rupees, while Rám Náráyan offered fifty lakhs. At length Mulhár Ráo consented to take one *kror* and persuaded Ápá Sendia, who at length agreed ; or some say the agreement was for twenty-five thousand rupees a day while the campaign lasted.* At any rate the Mahrattas commenced their march towards Delhi, where they soon arrived. A man of rank was sent out some distance to meet them, and the next day Mulhár Ráo and Ápá Sendhia had an audience of the Emperor, at which they were invested with khila'ts. The Wazír had sent for Suraj Mall Ját, who also received a robe of honour. The Wazír then requested orders to march, and the Emperor bestowing a *Fath-pech* (a kind of turban ?) on Safdar Jang, directed him to march with his army against Ahmad Khán. Safdar Jang crossed the Jamna with his own troops, and those attached to him, that is, the royal army *(Bárá)*, the Mahrattas, and the Jáṭs.

Safdar Jang's first order to the Mahrattas was to expel Shádil Khán, the Farrukhábád 'Amil, from the neighbourhood of Koil, and then to follow up his retreat to Farrukhábád. Mulhár Ráo and Ápá Sendhia sent off Pindára horsemen to spoil and burn throughout Ahmad Khán's territory. Hastening off as ordered, they began their usual plundering and surrounded Shádil Khán. Soon after this, Mulhár Ráo and Ápá Sendhia arrived in person and began an attack. Although his force was small compared with that of the enemy, Shádil Khán maintained his position for a time and did all that was in his power. After holding his own for one day and killing a good many of the enemy, he withdrew across the Ganges to Ḳádir Chauk, in parganah Aujháni of the Budaon district, whence after writing an account of affairs to Ahmad Khán at Allahábád, he marched eastwards along the left bank of the Ganges towards Farrukhábád. Shádil Khan's retreat took place in the early part of Jumadi I. 1164 H. (17th March, 15th April, 1751).

About six months had elapsed from the defeat of the Wazír in September 1750, when Nawáb Ahmad Khán heard at Allahábád of the retreat of Shádil Khán before the Mahrattas. He sent for Rájáh Pirthipat and told him that, in order to repel the Wazír, he must return home at once ; and by God's favour, having again defeated his enemy, he would rejoin the Rájáh and occupy the eastern districts. The Rájáh said he had one piece of advice to give, which was that he thought it inexpedient to return to Farrukhábád

Kishor and Lachmi Náráyan. The author of the Siyar-ul-M. says, it was his uncle Sayyad 'Abd-ul-Ali Khán who first suggested calling in the Mahrattas.

* The Siyar-ul-M. adds that the Jats were to get 15,000 Rs. and the Mahrattas Rs. 25,000 a day.

when the Wazír was already so near, for, however fast the Nawáb might march, it would be nearly impossible to arrive in time; and supposing that Farrukhábád were reached in time, the troops being scattered would still have to be collected; it would therefore be better to cross the Ganges into the Súbah of Oudh and then proceed westwards, by which several advantages would be gained. A hurried march need not be made, the army would not be scattered, the zamindars of Súbah Audh, who had been turned out of their homes in the time of Naval "*bad-aml*," would unsought bring aid, in money and in men. Another reason was that the immense number of mercenaries, who had collected under the Nawáb's standard, would disperse in the course of a rapid retreat on Farrukhábád. The Nawáb determined to consult his chief men, and the Ráját took his leave. Then Nawáb Ahmad Khán sent for Rustam Khán Bangash, Mangal Khán Ghilzai, Muhammad Khán Afrídí, Sa'dat Khán Afrídí, Mustajáb Khán Warakzai, Hájí Sarfaráz Khán and others. When they had been informed of the Ráját's proposals, they asked for time to consult with each other. They then went apart and discussed the question. The majority of votes was against crossing the Ganges, Hájí Sarfaráz Khán alone dissented. They returned to the Nawáb's presence, and stated that, in their opinion, by crossing the Ganges, the enemy would be deceived into believing that they had crossed from fear. "Let us fear nothing," they added, "this is the same "Wazír whom we have already defeated, and, by God's help, we will so "wield our good swords, that our enemy shall not escape alive again; the "enemy and his army are to us like the well-known proverb 'You may beat "the beaten.'" The Nawáb turning to Hájí Sarfaráz Khán said, "You say nothing." The Hají replied, that his opinion would not please any of the others, but he thought that Ráját Pirthipat's advice was the best.

According to the decision of the commanders, a march direct for Farrukhábád was ordered. The Ráját being sent for and informed of the decision, he asked what orders there were for him. The Nawáb said, he left the Ráját in that country for the present as his representative; he should, therefore, return to his own zamindári and recall the Audh zamindárs to their homes. The Ráját then received a *khila't* and, having been dismissed, he crossed the Ganges and hastened to his own country.*

* Under the year 1165 H. the *Balwant-námah* relates how the Nawáb Wazír started for Banáras intending to take his revenge on Ráját Pirthipat. At Sultánpur, about 36 miles S. of Faizábád and 85 miles N. of Allahábád, Ráját Pirthipat presented himself. When thrown off his guard by friendly words, he was stabbed by 'Ali Beg Khán, on a sign from the Wazír. Pirthipat, who was unarmed, sprang upon his murderer, and biting a piece out of his cheek fell dead with it in his mouth. The date of 1163 H. given in the *Miftáh*, p. 498, must be wrong, and the

By order of the Nawáb, his son, Mahmúd Khán, then about fifteen years of age, moved from Jhúsi westwards through Audh. On the road the zamindars of Ḍunḍyákheṛa, fifty miles south of Lakhnau, plundered the carts carrying the Nawáb's personal effects (*tosha-khána*). When it was reported to Mahmúd Khán that the baggage had been plundered and several soldiers killed, he halted, and in six hours sacked the village and massacred the inhabitants. After the fight some thousands of boxes were recovered in the village. As he advanced further west, he learnt that the Shekhs of Lakhnau and Kákauri* had risen and ejected the Paṭháns from those two places. At that time no reprisals were possible, and the young Nawáb marched on, near Bilgrám† where he met with some resistance, past Sándi and Páli,‡ to the bank of the Ganges opposite his father's entrenchment at Fatehgaṛh.

Commencing his march westwards from Allahábád, Nawáb Ahmad Khán in six days reached his own capital. But the adventurers, who had before joined him from all sides, being pure mercenaries, melted away on the road and retired to places of safety. Only those of good name and position remained true to his standard. His first care was to send off the Bibi Sáhiba and his female relations, who with considerable reluctance crossed the Ganges and set out for Sháhjahánpúr or Anwalah. Many of the inhabitants of the city, seeing her departure, began to desert their homes. The Nawáb now summoned all the commanders and leaders, name by name, to devise means of opposing the enemy. All the commanders and leaders, the bankers and chief traders of the bazar, all who were noted for their intelligence and ability, appeared before the Nawáb. They represented to him that the enemy was very numerous, while the Nawáb's force in comparison was like salt in flour. Admitting that though few they were brave, yet the wise men of old had said "one fights with one, not one with a thou-"sand." It was true the Nawáb was capable of meeting the kings of Europe in battle array, yet on this occasion the Wazír, to remove the stain to his name caused by his previous disgrace, had brought all the fighting men of Hindústán, the Jáṭs and the Mahrattas, like a tribe of ants or a flight of locusts. They therefore thought it advisable to move to the Ganges bank, near the ferry of Hussainpur, three miles east of the city

Siyar-ul-M., p. 883, indirectly confirms the date of 1165 H. The *Oudh Gazetteer* (II. 477 and III. 147) states the scene of the assassination to have been Gutni, on the Ganges, five miles south of Mánikpur.

* About 12 miles W. of Lakhnau.

† In the Hardoi district, about 34 miles from Farrukhábád.

‡ Both in the Hardoi district.

where there was a position favourable for defence with a small fort.* Around it was then a wide, open, plain about a square mile in extent. At the edges of the plain were deep ravines. They thought it best for the army to encamp in that spot. It is nowhere stated why the fort in the city was considered untenable ; perhaps because it could be cut off on the outer side from the surrounding country and its supplies ; while at Fatehgaṛh the army had the river flowing under its camp, by which boats could have easy access to it, and this danger was averted, so long as the enemy failed to cross the river and occupy the other bank.

At once, on hearing the suggestions of his chief men, relations and advisers, the Nawáb heartily agreed, and mounting his horse proceeded in state, with all his forces, to the place appointed on the bank of the Ganges, and there formed his camp. Next day the division of the army attached to the artillery arrived and brought the guns into camp. Then the Nawáb in person went out and taking up his position at the head of the ravines already referred to, directed the posting of the guns, large and small, and caused them to be connected by chains. Making over charge of the guns to his brothers and the Risáldars, he returned to his head quarters on the Ganges bank, and ordered a bridge of boats to be got ready. The day the bridge was finished, the Nawáb's son, Mahmúd Khán, reached the river on the opposite or left bank, and Shádil Khán Ghilzai also came up from Ḳádir Chauk in the opposite direction. The day after their arrival, both of them were honoured with interviews.

We now return to what had happened meanwhile to the Wazír. When his spies brought him word that Nawáb Ahmad Khán had returned from Allahábád, and was preparing for defence, he sent for Mulhár Ráo and Ápá, and asked them what was their plan of operations. They replied that they were at his orders. The Wazír told them to despatch one of their principal men with a strong force to surround Ahmad Khán, and cut off his supplies of food, water, and forage. Accordingly they detached Tántiá with ten thousand active horsemen towards Farrukhábád.

On reaching the environs of that city forsaken by its ruler, they set many villages and towns in flames. When the Mahratta horse entered the city, and found within it nothing but perplexity, poverty, hunger and thirst, giving up all hope of plunder, they marched on to the place where the Nawáb stood prepared for resistance. As their eyes fell on his army they said to one another, "O friends ! Mulhár Ráo and Ápá Sendhia sent "us to engage and surround this force ; but this Nawáb is so brave and "of such peerless race, that with only a few men he overthrew the Wazír "and his countless host." With such men they considered it was necessary

* Now known as Fatehgaṛh fort.

to act with circumspection. Hearing that some guns had been left at Yákutganj, about five miles south of the city and four miles from Fatehgaṛh, Tántiá sent off some of his horse in that direction. They collected a number of villagers and began to drag the guns towards their own camp. As they approached Kásim Bágh*, about half a mile south-west of Fatehgaṛh fort and Hussainpur, the Paṭháns, who had concealed themselves in the ravines, made a sudden rush and fell upon the guns, turned them on the Mahrattas, and fired shot and rockets, so as to kill many and put the rest to flight. When Tántiá saw this disaster, he mounted and ordered out his troops. The whole of his force advanced against the Paṭháns and commenced a musketry fire, accompanying it with the discharge of rockets. On hearing this firing, Nawáb Khán mounted and coming to the batteries stood there. He ordered his *risálahdárs* to advance to support the Paṭháns already under fire. Shádil Khán Ghilzai, Sa'dat Khán Afrídí, Muhammad Ali Khán Afrídí, Muhammad Khán Afrídí, Khán Miyan Khán Khaṭak, 'Umr Khán Gwáliyári, Námdár Khán, brother of Nawáb Ghairat Khán, Núr Khán, son of Khalíl Khán Mataniya, Mangal Khán of Tilhar and others, left their batteries and advanced to support the Paṭháns. Tántiá on his side came on to meet and repel them. When the two forces came closer, the musketry fire ceased and swords were drawn. The Afghán attack was so fierce that they even began to wrestle with their enemies, and to lay hold of them by the neck. Unable to bear up against the assault, the Mahrattas took to flight. When this success was reported to him, Nawáb Ahmad Khán sent a camel-rider with orders forbidding a further advance, and recalled the troops. The commanders on receiving this order, sent on the recovered guns in front, and followed them into camp with drums beating a triumphal march. The Nawáb gave praise to each private soldier and dresses of honour to the leaders. He then went back to his tents.

On hearing of Tántiá's defeat, the Wazír with the Jáṭs, Mahrattas, and the remainder of his army continued his march till he arrived near the Nawáb's entrenchment. He left Mulhár Ráo, Ápá Sendhia and Tántiá at the Kásim Bágh. He proceeded on himself till he arrived at Singhirámpur, a ferry on the right bank of the Ganges in Parganah Bhojpur, some eleven or twelve miles further down the river than Fatehgaṛh, and there he fixed his own encampment. Then he issued orders to Núr-ul Hasan Khán Bilgrámí to throw a bridge of boats across the river.

When Nawáb Ahmad Khán heard of the Wazír's intentions, he gave orders to his son, Maḥmúd Khán, who was posted upon the farther or left bank of the river, to detach two or three thousand men to prevent the

* The native infantry hospital is now in the Bágh, where is the tomb of Kásim Khán.

bridge being thrown across by the Wazír. The young Nawáb deputed Lála Syám Singh, brother of the deceased Shamsher Jang, chela. This chief at the head of his own regiment repaired to the threatened point, and on reaching it found the bridge half made. He began such a heavy musketry and rocket fire, that the enemy left their bridge and ran away. The attempt to cross was thus defeated, to be renewed afterwards with more success.

On the receipt of the first news of the Wazír's return with the Mahrattas, Nawáb Ahmad Khán had written in all directions for aid. Amongst others, he wrote to Nawáb Sa'dullah Khán and Háfiz Rahmat Khán, the heads of the Rohela confederacy, saying that though they had differences, they could settle those among themselves, but need not allow injury to come from the hand of strangers. He hoped they would send troops to help him, so that they might jointly attack their common foe. Háfiz Rahmat Khán first excused himself on the ground of the blood-feud between them, caused by the death of Ḳáim Khán; till the blood of Ḳáim Khán was forgiven, he would be afraid to trust his men in Ahmad Khán's power. The Nawáb replied, that he made them a gift of Ḳáim Khán's blood-feud, and thenceforth till the day of judgment he would take no revenge on them.

On the receipt of this letter, Sa'dullah Khán, son of Ali Muhammad Khán, sent for Háfiz Rahmat Khán, Donde Khán, Mullá Sardár Khán, Fath Khán, and Bahádur Khán, chela, informed them of its contents, and asked their advice. Háfiz Rahmat Khán, by reason of his affection for the Wazír, sat silent, and owing to his silence the other leaders would say nothing. Sa'dullah Khán asked Háfiz Rahmat Khán, why he said nothing? Rahmat Khán asked the Nawáb, what his own intentions were? The Nawáb replied, that his intentions depended upon those of others. Háfiz Rahmat Khán's answer was, that in that case the Nawáb would have to give up taking any part in the war. Bahádur Khán, who owing to his bravery took the lead among all the Rohela commanders, exclaimed, "Have our leaders "exchanged their turbans for women's veils, for such coward words should "be unknown to any Paṭhán lip." Then turning to the Nawáb, he said, that if orders for the march were not given, he should the next day start himself without orders, taking his regiment with him, and any Afghán, who cherished his name and reputation, might follow. Then rising he took his leave, and began his preparations. Nawáb Sa'dullah Khán repaired to the female apartments, where he repeated to his mother word for word the altercation which had occurred between Háfiz Rahmat Khán and Bahádur Khán. He then asked her what he ought to do, to follow Háfiz Rahmat Khán or Bahádur Khán. His mother said "Light of my eyes! to ask

"advice in such matters from our sex is not seemly, do as your heart dic-
"tates, but to me it appears that Háfiz refrains from action out of partiali-
"ty for the Wazír, while Bahádur Khán's readiness to join the war, shows
"his respect for his own good name and reputation." On hearing these words from his mother's mouth, Nawáb Sa'dullah Khán came out of the private apartments, and sent again for all the principal men. He declared that it would be dishonourable in him to refuse Nawáb Ahmad Khán's request for aid, and accepting all the consequences, he meant to march the next day, those might follow who liked, and the rest might please themselves. Then sending for Bahádur Khán, he said to him, "Inform my
"regimental commanders that if they hold themselves my servants they
"will attend me, otherwise, I dismiss them." Bahádur Khán carried out these orders, and except the contingents of Háfiz Rahmat Khán, Donde Khán, and Mullá Sardár Khán, all the others presented themselves, accompanied by Fath Khán Khánsámán. Next day the march began.

Let us now return to the events which occurred meanwhile between the two contending armies at Fatehgaṛh. Every day, on the side of Mulhár Ráo and Á'pá Sendhiá, from daybreak up to an hour and a half before sunset, an artillery fire was kept up, directed against the camp of Nawáb Ahmad Khán. At nightfall the Paṭháns would come out of their shelter in the ravines, go at the batteries and capture perhaps two or three small guns, which, after driving off those in charge, they would bring into their own camp. A little before sunset the rest of those concealed in the ravines came out of hiding, and began to cook or otherwise employ themselves. The leaders went to pay their respects to the Nawáb. One day they were all seated close to the Nawáb's private tent, when the enemy, noticing them collected in one spot, fired one of their heavy guns in that direction. By chance the ball struck the side of Kázim 'Ali Khán, son of Shamsher Khán the martyr, then engaged in the evening prayer. It next cut off the arm of Nawáb Shádi Khán, sixteenth son of Muhammad Khán, and hit two or three others. All were killed. On this sudden misfortune being reported to him, Nawáb Ahmad Khán got into his *palki* and came to the place where the two bodies lay, and standing there he gave orders for their burial, saying that the next day he hoped by God's grace to put several to the sword in exchange for those lost. After burying the bodies, the Paṭháns made a sortie and fell upon the camp of the Mahrattas. They fought most bravely and boldly all night, so that the Mahrattas were forced to give way. When the sun rose, the Paṭháns, with drums beating and swords drawn, returned to their camp with a number of severed Mahratta heads held aloft upon spears.

Upon the Wazír's receiving a detailed report of these nocturnal contests, he sent for the leaders of the Mughals and Ḳizilbásh, and told them how, although invested, Ahmad Khán's troops each night left their ravines to attack the Mahrattas, and every morning carried back heads upon spears. He wanted to know what they were about not to prevent this, and he told them that he spat upon their beards. That very day they must proceed to the threatened position, and so fight that they should either defeat the enemy and bring their heads to lay at his, the Wazír's feet, or else give up their own lives to the enemy. Those tiger-cubs *(sher-bacha)* joined the Mahratta army, and after a short rest hastened on to Kásim Bágh, opposite to which was the battery commanded by Mansúr 'Ali Khán, the thirteenth son of Nawáb Muhammad Khán. Between the *bágh* and the battery there was no cover, but the ground was uneven and rugged. The *sher-bacha* advanced out of the *bágh*, and taking shelter in a hollow, began a fire from large muskets. Again advancing in the same manner, they at length came quite close to the battery. When the Ḳizilbásh horsemen saw that the *sher-bacha* were close to the battery, they dismounted and advanced as a reinforcement. They all then attacked together. The Paṭháns, who were ready waiting for the enemy, gave them one round from their cannon and let off a number of rockets, then drawing their swords rushed upon them. When they had put many of their assailants to death, the rest giving way took refuge again in the Ḳásim Bágh. The Paṭháns followed them up and, forcing them to continue the retreat, themselves occupied the *bágh*. To the right of it, on the east side, there is an open space at a much lower level. Here there stood drawn up in ambush a very large force of Mahrattas. Seeing that the Wazír's soldiers were retreating, unable to withstand the Afghán attack, and that the Afgháns quitting their batteries had come as far as Ḳásim Bágh, a number of these horsemen dashed into the space between the battery and the *bágh*. The regiment was under the command of Tántiá. When the valiant Afgháns perceived that the Mahrattas had barred their retreat, they said to each other, "O friends, fire your arrows "and aim your swords first at the horses' legs, so that the rider having fallen, "you may slay him." All the Afgháns adopted this mode of dealing with the Mahratta horse, and they killed many of them. At length the Mahrattas dismounted and continued the fight. This engagement was watched by Mansúr 'Ali Khán Sáhihzádah from the battery. Rising and grasping his sword, he went out on foot towards the enemy. His personal followers with bared swords preceded him, among them was Hisám-ud-dín Gwáliyári, from whose book we quote. Counting his followers and others accidentally present, he found there were about one thousand men or thereabouts. These came up in the midst of the affray between the Mahrattas and the first

party of Paṭháns. They made an onset in the other direction, and at this point the men from the next battery on the left or east came up to reinforce them. Abdullah Khán Warakzai, Zábita Khán Khaṭak, Anwar Khán Kochar, and others used their swords with such effect that the Mahrattas gave way. When Tántiá saw that his men were on the point of taking to flight, and being angry at the disgrace of his former defeat, he dismounted and exclaimed that he would give up his life sooner than retreat. But his attendants forced him to remount and led him off to his camp. As the defeated Mahrattas began to flee, Nawáb Mansúr 'Ali Khán Sáhibzádah and the other leaders sent for their horses, and mounting hastened after them as far as the eastern corner of the *bágh*, whence they saw that the Mahrattas in great confusion had reached their own camp. Mansúr 'Ali Khán and the others, leaving the *bágh* on their right hand, came round to the west of it and halted. Nawáb Ahmad Khán now rode up to the batteries, and directed the commanders not to leave their batteries nor to draw up their troops beyond the ravines, for the Mahrattas would give no further trouble. Mansúr 'Ali Khán then returned to his old position, and Nawáb Ahmad Khán accorded him great praise. All the commanders were ordered to remain in their batteries on the alert. After this Nawáb Ahmad Khán returned to his own quarters.

After the investment of Fatehgaṛh had lasted a month and some days, there came the report of the near approach of Nawáb Sa'dullah Khán. This news caused great anxiety to the Wazír, Mulhár Ráo, and Ápá Sendhiá. Háfiz Rahmat Khán had written to the Wazír, that although he had done his best to dissuade Sa'dullah Khán, his advice had been rejected and the Nawáb had marched to the aid of Ahmad Khán. He therefore advised the Wazír to make a peace with Ahmad Khán, in the best way he could, before Sa'dullah Khán arrived, for, according to the tradition, "Peace is preferable to enmity."

Next day the Wazír went to Mulhár Ráo and Ápá Sendhiá's quarters, and informing them of Sa'dullah Khán's march, he asked what they thought. Mulhár Ráo and Ápá Sendhiá sending for their principal men reported the matter to them and asked their opinion. All the leaders, except Ápá Sendhiá, who was privately favourable to Ahmad Khán, said they were entirely at the disposal of the Wazír, their opinion need not be asked, they would carry out whatever orders they received. The Wazír turning to Ápá Sendhiá asked the reason of his silence. He replied that there could be no dispute about the self-evident, what all men could see could not be doubted. They had in no way been slack in carrying on the war, Ráo Tántiá had kept up constant hostilities, yet they had not succeeded. As for the Wazír's army, which was made up of picked troops, its

state the Wazír himself had seen. Ahmad Khán had got the better of both their army and of the Wazír's, and when Sa'dullah Khán joined him it would be quite impossible for any one to beat the united force. The Wazír then admitted to the Mahratta leaders that Háfiz Rahmat Khán, in stating that Sa'dullah Khán had been led astray by Bahádur Khán, added that it would be best for the Wazír to make a peace before Sa'dullah Khán arrived. The Wazír requested their opinion. They answered that there could be nothing better than to do as suggested, for then further losses on both sides would be prevented. The Wazír asked the best way to open negociations; for if on their side the first advances were made, it would lower their dignity. Ápá Sendhiá said, that in his opinion, the objection could be obviated by calling in Nawáb Ghairat Khán and Himmat Khán, who were themselves Paṭháns.

Mulhár Ráo and Ápá got up, followed by their chief men, and assembled in another place. They sent for Nawáb Ghairat Khán and Himmat Khán. The Mahrattas told them that they did not wish that Nawáb Ahmad Khán should be reduced to extremities, that he should be expelled from his territories or lose his life in battle. As they wished for peace between Ahmad Khán and the Wazír, they asked them to negociate. The two Paṭháns recounted all the wrongs received by Ahmad Khán's family at the hand of the Wazír, and upbraided the Mahrattas for forgetting the former friendship between them and the house of Ghazanfar Jang. The Mahrattas admitted the former friendship, but pleaded the *farmán* of the Emperor of all Hindustan, which had directed them to serve under the Wazír. Still they had not exerted themselves much, in fact had acted purposely with carelessness and negligence. Ghairat Khán and Himmat Khán then commented unfavourably on the Emperor's treatment of the Bangash family, and made other objections. At length they were talked over and withdrawing their objections, they asked what the proposals were. Mulhár Ráo asked them to go home, and he would assemble the leaders; when a decision had been arrived at, they should be informed.

The two Paṭháns left and went to their tents, while the Mahrattas remained to discuss the matter among themselves. At last it was decided that ten lakhs of rupees should be given by the Wazír as the price of blood for the sons of Ghazanfar Jang, and that, besides the ancient territory, the Wazír should make over two of his own Maháls, Páli and Sándi,* which adjoined the other lands of Ahmad Khán. When they went to the Wazír and informed him, he accepted their decision. The leaders then proceeded to the quarters of Nawáb Ghairat Khán and Himmat Khán, where they made them acquainted with the proposed terms, which they considered very

* Both now in the Hardoi district of Audh.

favourable to Nawáb Ahmad Khán. They requested that a trusty messenger might be sent to the Nawáb to lay the matter before him on their part. Nawáb Ghairat Khán selected his brother Alaf Khán. Alaf Khán went and represented to Nawáb Ahmad Khán, that ten lakhs would be paid, and that Páli and Sándi would be added to his former territory. As soon as he heard the words, Ahmad Khán said that, if the Wazír paid ten *krors* of rupees as the price of his brother's blood, never would he accept it, nor if twenty sons of the Wazír were slain, would he be satisfied. He declined to treat, and left it to the decision of the sword—

"Har kih shamsher zanad sikka ba-nám-ash khwánd."

Nor let them think that he was invested in that fort, for he was ready at any moment to meet them in the open field. His defeat of the Wazír had passed into a proverb; as for Suraj Mall Ját, he was the same who had been unable to stand up against him before, and in company with the Wazír had taken to flight. By God's favour, after victory they would see him act as an honorable and brave man should act. Till their fate had been tried in battle, what peace could there be. If he gained the day, he would attain his desires, if the fates were against him, he bowed to the will of the Most High; but the blood of Ghazanfar Jang's sons should never be sold for gold. He then gave Alaf Khán his dismissal, and presented him with a dress of honour, a horse, and a sword.

Soon after Alaf Khán had departed, messengers brought word that next day Nawáb Sa'dullah Khán would march up and encamp on the bank of the Ganges. Orders were accordingly given to Nawáb Mahmúd Khán and Manavar Khán Sáhibzádah to go out to welcome him. At one watch before sunrise those two chiefs started, as directed, to meet and escort Nawáb Sa'dullah Khán.

Next day the army of Sa'dullah Khán, with swords drawn and drums beating, came into sight. It is said they were twelve thousand in number.* All the Paṭháns and Rohelas, and the soldiers in all directions, out of joy and delight at sight of this reinforcement, began firing off their guns. They were so puffed up with pride and became so haughty that they remembered not God. Sayyad Asad 'Ali Sháh with several men, among others Hisám-ud-dín Gwáliyári, was seated on the river's bank watching the arrival of the army of Nawáb Sa'dullah Khán. As the holy man's glance fell upon the troops on the further side of the river, he became suddenly agitated, and falling into a deep reverie, he exclaimed, "Slain and defeated." When he returned to his ordinary state, he said that the joy and rejoicing of these men had not found acceptance, they would see what the morrow should bring forth.

* Life of Háfiz Rahmat Khán, p. 40.

Sa'dullah Khán pitched his tents on the opposite or left bank of the river, and Nawáb Ahmad Khán sent off for his use food of every description by the hand of Mustajáb Khán Warakzai. Nawáb Ahmad Khán also sent a request that next day Sa'dullah Khán would cross the Ganges, for it was highly important to combine their forces into one. This message was delivered, but Sa'dullah Khán said that, after consulting with his chief men, he would send word of his intentions. Then he sent for Bahádur Khán and Fath Khán, and told them of Nawáb Ahmad Khán's request. Bahádur Khán, who was very reckless, replied that it was not meet to present themselves before the head of the Afghán clan without an offering (*nazarána*), and word should be sent to Ahmad Khán, that if God willed, they, his well-wishers, would the next morning lay before him as an offering the heads of the Wazír, of the Mahratta chiefs, and of the Ját leader. Sa'dullah Khán, being youthful and inexperienced, sent off a message to that effect. Ahmad Khán replied that whatever he thought best he should do, but to one thing he should pay the strictest attention, namely, not on any account to quit his hold of the river bank. When the fighting began, if the Mahrattas turned, he should not let his men pursue, because it was the Mahratta practice to pretend they had been put to flight, and lead their enemy away from his supports. Next day Sa'dullah Khán and Mahmúd Khán and Manavar Khán Sáhibzádah prepared for battle and, ranging their troops in order, led them against the enemy.

On the other hand, the Wazír had been greatly frightened by the arrival of Sa'dullah Khán. He sent for Mulhár Ráo, Apá Sendhiá and Súraj Mall Ját in order to consult. The plan was adopted of sending troops across the river to meet and fight Sa'dullah Khán, before he could unite with Ahmad Khán. The bridge at Singhi-rámpur, which was in bad condition, was put in order. Then Khánde Ráo, son of Mulhár Ráo, and Tántiá Gangádhar with fifty thousand men crossed the bridge. Jowáhir Singh, son of Súraj Mall Ját, and Ráná Bhím Singh, zamindar of Gwáliyár, followed with forty thousand horse and foot. The attack upon the Rohelas then commenced. At first the Rohelas under Bahádur Khán let fly rockets, which fell from the sky like rain; then they discharged their muskets. By degrees they gave over firing and drawing their swords, rushed upon the Hindús, who soon beat a retreat. Bahádur Khán, forgetting Nawáb Ahmad Khán's counsel, quitted the river bank to pursue the flying enemy. With Bahádur Khán may have been some two or three thousand men. He went in pursuit far ahead of the main body of his troops. The enemy, seeing that there was only a single elephant followed by a few men, without any reserves at hand to reinforce them, turned upon Bahádur Khán and surrounded him. Bahádur Khán got off his elephant, mounted his horse, and followed by his men with their swords

drawn, tried to repel the enemy. But the Hindus encircled them, as if they were shooting game, and kept up at them a galling discharge of musketry and arrows. They also wounded many and killed many with sword and *dhop* (a kind of sword) and lance and spear. Bahádur Khán, so long as he was alive, kept hold of his sword, nor did he belie his name of Bahádur (the brave). Not a soul coming up to aid him, at last he fell off his horse, and gave up the ghost. The enemy then cut off his head; and those of his men who remained sought safety in flight. This disastrous defeat, which suddenly changed the whole complexion of the campaign, occurred early in Jamadi II. 1164 H. (16th April—15th May, 1751).

When Sa'dullah Khán heard that Bahádur Khán was killed, he asked Fath Khán Khánsámán what should be done. Now, all the other leaders had entertained a deep-felt enmity to Bahádur Khán. At the time of departure from Anwalah, Háfiz Rahmat Khán had said privately to Fath Khán that in battle Bahádur Khán was sure to be the foremost, it would be well to arrange judiciously that no one went to his support, so that he might be overcome and slain, thus getting rid of a great thorn in their side, for it was he who had incited Nawáb Sa'dullah Khán into taking the part of Nawáb Ahmad Khán. And if Ahmad Khán should overcome the Wazír, he would aim at the throne itself, none being left to contend with him; then, taking satisfaction for the blood of Ḳáim Khán, he would expel all the Rohelas from their country.

On Sa'dullah Khán's putting the question to him, Fath Khán found his opportunity, and he at once said that the best thing was to turn their faces towards Anwalah. The Nawáb replied that honour would not permit him to depart, leaving Ahmad Khán in the mouth of the enemy. Fath Khán answered that Ahmad Khán had now no chance of success, he too would soon follow to Anwalah, where they could consult together on the best course to be pursued. Sa'dullah Khán gave in to these arguments as conclusive and turned his face towards Anwalah.*

Nawáb Mahmúd Khán and Manavvar Khán, finding that Sa'dullah Khán was moving off towards Anwalah, returned to Nawáb Ahmad Khán's head quarters. Ráná Bhím Singh and Jowáhir Singh, son of Súraj Mall Ját, who were in command of the enemy on that side of the river, were now in a position to oppose the return of the two Sáhibzádahs. Jowáhir Singh wished to cut off their retreat, but the Ráná objected. He was a well-wisher to the family of Ghazanfar Jang, Daler Khán, the well known

* The life of Háfiz Rahmat Khán, p. 40, says Sa'dullah Khán reached Anwalah without an attendant on the third day after his departure. On both points this statement must be somewhat exaggerated.

chela of that Nawáb, having been his uncle.* The Ráná's objection prevailed, and an hour or so before sunset, the Sáhibzádahs presented themselves before the Nawáb.

When the report spread that Bahádur Khán had been killed, and that Sa'dullah Khán had retreated to Anwalah, the whole of the men in camp began to tremble like willows. Nawáb Ahmad Khán mounted his elephant, and proceeding to the embrasures of the batteries, told every body that his ability to wage war was not dependent on Sa'dullah Khán, that God willing, he would next day order an advance from the batteries, and going as far as Singhi-rámpúr, would give battle to the Wazír. Then privately sending for each leader, he told him to be on the alert, for at three hours before sunrise he would march to make a night-surprise on the enemy. After such-like reassuring speeches he returned to his tent. He gave orders to the men in charge of the bridge to break it up. The investment had now lasted one month and eleven days.

Three hours after night-fall the Mahrattas and Jáṭs set fire to Sa'dullah Khán's tents, and the flames burned so brightly, that it was light as day in Nawáb Ahmad Khán's camp. Those in the army who were frightened, and in all their lives had never seen such a confusion and conflagration, began to make their escape. The leaders and men of reputation alone remained at their posts. These, seeing the state of fright into which their troops had been thrown, went in a body to the Nawáb and represented to him the state of affairs. He asked what they thought. They advised him to cross the Ganges and take safety in flight. At first he refused, but at length becoming convinced that there was no other course open to him, he consented. Then taking his brothers Murtazza Khán, Khúdábandah Khán, 'Azim Khán, Manavvar Khán, Salábat Khán, Sháistah Khán, and his chief men, such as Rustam Khán Bangash, 'Ináyat 'Ali Khán, Bahyáb Khán, Shádil Khán, Mangal Khán, Sa'dat Khán, Mustaját Khán, he left the fort while it was still night, and proceeded up stream along the river bank. The Mahrattas came up with the rear guard of the retreating Paṭháns near Shikárpur ghat, which is five miles above Fatehgaṛh. The Nawáb continued his flight to Kamrol ferry, about fifteen or sixteen miles above that place, and there his elephant Kálá-pahár swam across, guided by Ramzání Mahaut, after they had thrown in a bag of gold to propitiate the genius of the stream. Many of his followers lost their lives in attempting to swim their horses across after him. The Nawáb proceeded through Amritpur to Sháhjahánpur, and thence to Anwalah.

* See p. 286, Vol. XLVII, 1878, where I state reasons for doubting the correctness of this relationship.

Meanwhile Nawáb Mansúr 'Ali Khán Sáhibzádah, 'Abdullah Khán Warakzai and others had received no notification of the Nawáb's departure, their batteries being to the left of the Nawáb's position. When a rumour of the flight of the Nawáb was brought, Mansúr 'Ali Khán got up and mounted his horse, followed by Hisám-ud-din, Rasúl Khán and others. He sent for his jama'dárs and said to them that the Nawáb had sent for him, that he was going to see what orders there were. He then went away. As a long time passed without his returning, Rasúl Khán said to Hisám-ud-din "I expect the Nawáb has gone," and he sent a man to make enquiries. This messenger did not return. While still waiting for his coming, the night was spent and day began to break. When the rumour of the Nawáb's flight spread, a panic arose, and each man began to look out for his own safety; some hid in the brushwood *(jháo)* in the river bed; others rode their horses into the stream, thinking to escape by swimming, but they were all drowned. The events of that day, Hisám-ud-dín says, cannot be described, he can only recount what befell himself.

When day arose Hisám-ud-dín, Rasúl Khán, Ghairat Khán and 'Abdullah Khán resolved to sell their lives dearly, and all by themselves issued from their battery. They saw the Mahrattas stripping of their clothes, one by one, all those fugitives, who had neither got clear off nor had been drowned in the river. A group of these Mahrattas came towards Hisám-ud-dín and his companions and surrounded them. In the party were three horsemen, Hisám-ud-dín, Rasúl Khán, and 'Abdullah Khán Warakzai, all the rest were on foot. These latter on seeing the enemy began to divest themselves of their clothes and threw them down. Ghairat Khán Bangash, however, drew his sword and ran at the enemy, and after some passes with his sword, was wounded and fell. Some of the enemy recognizing him, made him a prisoner. The same happened to Rasúl Khán and 'Abdullah Khán. Hisám-ud-dín with a few men remained standing on one side. Sarfaráz Khán Dilázák, a native of Dholpúr-Shikárband, was holding Hisám-ud-dín's horse. He was a great friend and protector of Sayyads. Hisám-ud-dín said to him, "You see what has happened to the others, what shall we do?" He replied that, when he had taken service, he held it to be part of his duty to give his head for him he served; now that the time had come, to shirk the blow would be a coward's deed. Then calling to his three brothers who stood near, they all four, sword in hand, rushed upon the foe. After a fierce hand-to-hand struggle, they were overcome and slain. Then the enemy's horsemen rode up and surrounded Hisám-ud-dín. Standing at a little distance they cried out to him. "Take your hand from your bridle, "if you want to save your life." He answered that with his horse went his life and his head, should he fall, the horse was theirs. On this they said

to each other something in Mahratti, which he did not understand. Then one of them lifted his right hand and hurled his spear at Hisám-ud-dín. It struck him between the side and the left arm. Another spear was thrown by the same man from his left hand. This second spear entered at the right side, and the two spears crossing each other stuck out like the handles of a pair of scissors. The wounds caused Hisám-ud-dín to feel giddy and left him no strength to wield his sword. Just then the shaft of one of those spears fell down, and struck the horse on the crupper. From the blow the horse gave a bound, and Hisám-ud-dín, losing control of him, was thrown, with the two spears still sticking into him like a pair of shears. At once several of the scoundrels got off their horses and making him a prisoner, wrenched the bare sword out of his right hand. Hisám-ud-dín now thought it was all over, and turning his thoughts to Heaven, he humbly prayed to God that, whether his life were taken or not, he might be sprared further dishonour. As he lay, he turned his face towards the Ganges, and being on the high bank at the edge of the river, he could see below him a number of Afgháns, who for fear of their lives had stripped themselves naked and were crouching in the water. At this moment a fresh party of Mahrattas came up. On seeing them, many of these seated at the water's edge threw themselves into the river; the rest, seeking quarter by putting their fingers between their teeth, were captured and driven off towards the camp.

In a short time some other horsemen rode up and asked Hisám-ud-dín why he was seated there alone. He replied "What else can I do?" They said "Come with us." He said "I am not able to walk." They had with them a wounded horse, which they ordered him to mount. He obeyed and mounting rode with them. The sowars took him straight to Mulhár Ráo, who was standing with his retinue near the Kásim Bágh. Mulhár Ráo said to him, "Did Ahmad Khán cross the Ganges early or late in the night?"

Hisám-ud-dín.—"I do not know."

M. R.—"How can I believe that you could have been in Ahmad Khán's camp without knowing?"

Hisám-ud-dín.—"If I had known I should have gone with the Nawáb."

M. R.—"That is true."

He then ordered one of the horsemen to take Hisám-ud-dín to the tents of Khánde Ráo,* where he was to receive every indulgence consistent with his detention as a prisoner. When brought before Khánde Ráo, he assigned comfortable quarters to Hisám-ud-dín.

* Khánde Ráo was killed at the siege of the Ját fort of Komber in 1755-6. Grant Duff, 284.

Next day Mulhár Ráo, with his chief men, paid a visit to his son Khánde Ráo. Among his retinue was one Shekh Muhi-ud-dín, resident of Narmálpúr, in the service of Anthal Ráo, Mukásadah-dár* of Gwáliyár. This Shekh came up to Hisám-ud-dín, and asked, "What is your name?"

H-ud-D.—"Hisám-ud-dín"

M-ud-D.—"Where is your native country?"

H-ud-D.—"Gwáliyár."

M-ud-D.—"In what mahalla (quarter of the town) do you live?"

H-ud-D.—"My home is outside the city, they call the place Ghaus-"púr."

M-ud-D.—"Are you any relation to Ghaus-i-Islám, the saint?"

H-ud-D.—"My grandfather Makhdum Abu'l Hasan (on whom be "peace) was sister's son, and also son-in-law of Ghaus-i-Islám."

On hearing this, the Shekh took Hisám-ud-dín to Nawáb Manavar Khán, son of Nawáb Anwar Khán, a descendant of Sháh 'Isa Burhánpuri. This latter was a disciple of Sháh Lashkar 'Arif, who himself was a disciple of the saint Mírán Hamid-ud-dín, known as Ghaus Gwáliyári. To the Nawáb he reported minutely all their conversation. At once, the Nawáb came forward out of the group in which he was standing, and with the greatest courtesy approached to Hisám-ud-dín, stated his wish to be his firm friend, and putting him on his own horse, led him away to his house. There he was treated with every kindness. After a time the Nawáb urged Hisám-ud-dín to enter his service, but he refused, saying, "I shall be equally "grateful to you, if you will put me across the river Ganges, so that I "may rejoin Nawáb Ahmad Khán wherever he may be." At length the Nawáb gave up his efforts to detain Hisám-ud-dín and agreed to his departure. The day after, he rode in person to the river bank and saw that Hisám-ud-dín got safely across. 'Abdullah Khán Jama'dar had at that time just crossed with a party of Afgháns and Rohelás. Joining them Hisám-ud dín set out for the camp of Nawáb Ahmad Khán.

The Campaign in Rohilkhand.

When Nawáb Ahmad Khán saw that all had left him except his leaders and jamádars, he came to the conclusion that the rulers of Anwalah had only sent Sa'dullah Khán to join him in order to get rid of Bahádur Khán. Besides, they may have thought that Ahmad Khán's soldiers would in despair desert and join them. Although fully aware of all these plans, Ahmad Khán found that the deplorable state of his army made resistance hopeless. Therefore, as already related, he crossed the Ganges and made his way to Anwalah where the Rohela leaders came out to meet him.

* See Grant Duff, pp. 36, and 98 for meaning of this term.

Hamilton* comments unfavourably on the imprudence of the Rohela policy in allowing a part of their forces to join Ahmad Khán. The answer seems to be ready in the facts of the case, which in Hamilton are substantially as we have given them. Action was taken by the hot-headed youth, Sa'dullah Khán, against the wishes of the more experienced leaders. But having once gained the advantage, it was not likely that the Wazír, still less the Mahrattas, would make any fine distinctions between Sa'dullah Khán's enmity and the friendly feelings of the rest. The whole Rohela confederacy was to be attacked and swept away.

Consultations were now held between Ahmad Khán and the Rohelas; and the plan at length decided on, was to take shelter at the foot of the Kumáon hills. Next day Nawáb Ahmad Khán with the Rohela leaders, setting out towards the hills, reached Murádábád. It so chanced that there was a halt there of several days' duratiou. In this interval messengers brought word that the Wazír, leaving Mulhár Ráo and Ápá Sendhiá at Singhi-rámpúr, had proceeded to Lakhnau. On hearing this, the Rohelas told Nawáb Ahmad Khán that they considered it advisable to return to Anwalah, the rainy season being close at hand, during which they could rest undisturbed at home, employing the time on summoning their clansmen from all sides, and making ready to renew hostilities with the Mahrattas. This place was accepted by all, and they returned to Anwalah. The Rohelas went to their houses, and Ahmad Khán encamped outside the town.

When the rains of 1751 were over, preparations were made for a campaign, boats were collected, and a bridge was thrown across the river called the Rám Gángá. This river flows through Rohilkhand and falls into the Ganges on the left side nearly opposite Kannauj, more than forty miles below Farrukhábád. On a report being brought to the enemy of the advance of Ahmad Khán with the Rohelas and other Paṭháns, they despatched Khánde Ráo, son of Mulhár Káo, with other leaders and a numerous army, across the Ganges, to meet and repel them. Then Ahmad Khán and the Anwalah *Sardárs* crossed their bridge, and gave strict orders to their men to keep close to the river bank, following its course. The river at one place described a semicircle. Here the Mahrattas had taken up their position, intending to bar the Afghán advance. Donde Khán, who commanded the vanguard, seeing the position occupied by the enemy, came to the conclusion that he could not effect a passage along the river bank. He therefore refrained from continuing his march, and posted his artillery between the two points to east and west formed by the bend in the river. By this manœuvre he cut off the enemy's line of retreat. When Khánde

* History of the Rohela Afghans, pp. 106 and 108.

Ráo saw that they had fallen into the trap laid by the Paṭháns and that their retreat was cut off, he sent a man to Nawáb Ahmad Khán to make terms. The messenger said, that though by the Emperor's order they had served the Wazír in this campaign, they were not in heart fighting for him, they only fought to save appearances; what should be now agreed on privately with them, they swore solemnly to carry out in writing, when the campaign under the Kumáon hills had once commenced. Ahmad Khán, on this message being received, sent for Háfiz Rahmat Khán, told him what was proposed, and referred to the old friendship between his father, Muhammad Khán, and the Mahrattas. He then requested Háfiz Rahmat Khán to send orders to Donde Khán to withdraw from his position closing up the Mahratta line of retreat. Háfiz Rahmat Khán in reply said that in time of war, Donde Khán took orders from no one, perhaps if Nawáb Ahmad Khán went in person he might agree, and he, Háfiz Rahmat Khán, was willing to accompany him to the spot.

The order of battle was as follows; To the rear and in support of Donde Khán were Bahádur Khán and Mullá Sardár Khán; after them came Fath Khán Khánsámán; and then Nawáb Sa'dullah Khán with Háfiz Rahmat Khán, who, mounted on one elephant, formed as it were the advance-guard of Nawáb Ahmad Khán. Ahmad Khán and Háfiz Rahmat Khán proceeded to Donde Khán's head-quarters, where they informed him of what the Mahrattas had promised and had sworn an oath to do. He said in answer, that the Mahrattas must have sent overtures only because they were in extremity. For was not the river on three sides of them, and had he not cut off the fourth? Without any labour or trouble a speedy victory would be obtained. Oaths taken at such a juncture were worthless. The Nawáb admitted that what Donde Khán said was quite true, but it was against the creed of a good Musulman to refuse peace to those who asked it. If their oaths were false, God would mete out the punishment. Donde Khán was forced at length to accede, and he sent word to his regiments to withdraw and allow a free passage. The soldiers were then moved off, and the road cleared for the enemy. Then Nawáb Ahmad Khán and Nawáb Sa'dullah Khán pitched their tents on that spot. Next day they marched onwards, and reached the head of the boat-bridge, thrown across by the Wazír under Singhi-rámpúr.

Before the arrival of the Mussulman forces, the Mahrattas had broken up the bridge, and when Nawáb Ahmad Khán reached the place he found the river separating him from the enemy. Artillery fire began on both sides. The troops who had been allowed to withdraw from their critical position in the bend of the river, gathered round the Nawáb's army but did not come to close quarters. After things had been in this situation for a

week, and no means could be found of crossing the river, and the food which the troops had brought with them was nearly exhausted, the Rohela leaders represented the state of affairs to Nawáb Ahmad Khán. He asked what they thought of doing. Háfiz Rahmat Khán then told him that during the night a letter to Sa'dullah Khán had been received from Najíb Khán, to the effect that he would arrive shortly with reinforcements. He was advancing down the opposite or right bank of the Ganges. This being the case, they thought it best to march and encamp themselves near Súrajpúr, a ferry in Parganah Kampil, some thirty miles or more above Farrukhábád, and forty-two miles from Singhirámpúr. There they could collect boats, and then crossing the river they could join with Najíb Khán in making a forced march against Mulhár Ráo, who had at the moment only a small force. Time must not, however, be given to repair the broken bridge. Therefore, on marching, they would give out that they were retreating to their own bridge over the Rám Gangá, to replenish their stores of grain; and that having obtained fresh supplies, they would at once re-occupy their old position and renew hostilities. Nawáb Ahmad Khán consented and they marched. The Mahrattas kept up a distant fire as they marched off, but they made no attempt to follow.

Meanwhile the Wazír, who had heard of the Afgháns' attempt, hurried back and crossing at Mahndi ghát in parganah Kannauj, forty miles below Farrukhábád, rejoined Mulhár Ráo at Singhirámpúr on the 9th Muharram 1165 H. (17th November 1751). On his arrival the whole of the guns were fired off as a salute, and the sound excited great consternation in the Paṭhán camp. On hearing that the Wazír had arrived, the Paṭhán leaders assembled, and after a discussion it was finally decided to march straight to Bangaṛh in parganah Budaon, ten miles north of Budaon. Bázíd Khán, commander of the artillery, was sent for and received orders to move off with his guns, first firing a salvo from all his pieces. These orders were executed and the artillery set out. The change of plan had not been communicated to the troops. When they saw the artillery being removed, a panic took possession of all except the commanders and other principal men. Not a single man kept to his proper place. When the leaders saw this, they were much cast down, saying to each other, "Without a battle we have been defeated." Nawáb Ahmad Khán and his men were half a *kos* distant from Nawáb Sa'dullah Khán's troops, and quite ignorant of what had occurred in the Rohela camp.*

* Here Hisám-ud-dín appears to gloss over a defeat which, as is admitted by the Rohela account (Life of H. R. K., p. 42), occurred on the road to Anwalah. The Mahrattas, they say, had crossed by Kamrol, which is twenty-eight miles above Singhirámpur. Hamilton (p. 109) places the scene of the defeat at Islámnagar, thirty-

The sun had not yet risen when Sa'dullah Khán, Háfiz Rahmat Khán, Donde Khán, Mullá Sardár Khán, Fath Khán and others rode into Ahmad Khán's camp. The Nawáb was asleep, but Mustajáb Khán and Háji Sarfaráz Khán went in, woke him, related what had happened to the Rohelas, and informed him of the presence of Sa'dullah Khán and the others. Then Ahmad Khán sent for his chief men, Rustam Khán Bangash, Sa'dat Khán Afrídí, Mangal Khán, Jamál Khán, Zábta Khán, Muhammad Khán, 'Abdullah Khán, Anwar Khán, Sa'dat Khán Toyah, Shamsher Khán Mahmand, Shádil Khán Ghilzai, and others. He gave orders to Shádil Khán and Sa'dat Khán to move off at once, break up their bridge and direct the boatmen to remove the boats forthwith to Súrajpur ferry. There they were to form a bridge of boats and maintain their position, as he intended to cross the river at that point. To the other commanders he gave orders to arm and be ready. He then directed his march towards the Ganges in the direction of the Rohelas, and taking them with him on his right, they all encamped on a wide open plain. The Rohelas then sought an interview and explained the condition of their troops. They told him that on sending off their artillery to Bangarh, their men had scattered, intending to take to flight. With such a state of things existing, it was impossible for them to continue hostilities in the field. The Nawáb said he ought to have been informed of their intentions at once, when they could have concerted other operations. To retreat without giving battle was pitiful weakness and would be so held by all the world. The Rohela leaders held down their heads and spoke not a word. At length they ventured to say, "What is done cannot be "helped, the arrow shot from the bow cannot be recovered." In reply to the Nawáb's further enquiries, they stated that, their army having once lost heart, they had better go to Anwalah, assemble all their families and go with them to the hills. They advised the Nawáb to do the same. The Nawáb, with great reluctance and under compulsion of necessity, agreed to their proposals. At an hour and a half before sunset they started for Anwalah.

Next day, before the setting of the sun, they entered Anwalah, and Nawáb Ahmad Khán took up his quarters in a *bágh* inside the town. There he rested for nine hours. When one watch remained to daybreak, he sent for Nawáb Sa'dullah Khán and set out towards the hills. The other leaders had been employed the whole night in collecting their cash and buried treasure, their household effects, the artillery and the rocket

two miles north-west of Budáon, but that seems too far to the west. It might be Islámganj, close to Allahganj in parganah Amritpur. Perhaps Hisámud-dín, being half a *kos* off, did not witness the battle, but that hardly excuses his suppressing it, as he must have heard of it immediately afterwards.

train. Then leaving the town in company with their wives and children, they set their houses in flames and marched off. At three hours after nightfall they reached Rámpúr, where they pitched their tents. Next day they marched again and got to the neighbourhood of Murádábád. After a halt of some six hours, they resumed their route for Káshipur, thirty miles north of Murádábád. At that place a spy from Ápá Jíu Sendhiá arrived with a letter for Nawáb Ahmad Khán. It stated that when the Wazír heard that his enemy was retreating towards the hills, he at once gave orders to his army to cross the river and pursue by forced marches, without halting anywhere. Mulhár Ráo and Tántiá, with thirty thousand men and the Mughal "Kizilbásh," had been detached on this duty. The letter said that they would soon come up, and Ahmad Khán had better enter the hills at once and prepare for defence. Ahmad Khán sent for Háfiz Rahmat Khán and the other Rohela leaders and informed them of the intelligence he had just received. To the messenger he gave seven gold coins and sent him back.

Without further delay the Paṭháns started for the hills. The following day they entered the low jungle, and there they found a place surrounded on three sides with impenetrable growth of thorns and bushes. On the fourth side, which afforded a passage, they dug an extremely deep ditch, and along it built towers, which made it look like the fort of Daulatábád in the Dakhin. In the centre of this plain they pitched their encampment.* The Anwalah leaders also put up their tents and, ranging their cannon, connected them with iron chains. Notwithstanding all these preparations, they were much dejected, for they saw no prospect of supplies, and without food the place was untenable. For a time, in default of any thing else, they subsisted upon sugarcane. After two or three days had passed without any change, Nawáb Ahmad Khán sent for all the Rohela leaders and told them, that although the Omnipotent had favoured them with a refuge, whence they could defy the kings of all the seven climes, yet it was absolutely necessary to secure food. The Rohelas replied that the Ráják of Almorah had great affection for Sayyad Ahmad, the Názim for his territory at the foot of the hills. This Sayyad was, they said, hospitable and kind-hearted and well-affected towards them. They advised that application should be made for assistance in grain, accompanying the letter, which should be in affectionate terms, with rare and costly presents of every kind. The Nawáb having approved of this suggestion, Háfiz Rahmat Khán, leaving his presence, went straight to the Sayyad, who held a battery with Najíb Khán, and reported to him what had been decided

* The Life of H. R. K., p. 42, says the encampment was at Chilkya, which is 22 miles N. E. of Káshipur, and some 48 miles N. E. of Murádábád.

upon. He brought the Sayyad to the Nawáb, who gave him a rich present and sent him off to Almorah with the letter. Before the Sayyad reached that place, a wakil from the Wazír had arrived by way of the Mahdi jangal. The Wazír's message was, that as his enemies had sought shelter at the foot of the hills, it would only be consistent with friendship to cut off all supplies of grain from the fugitives. In return for this favour, the Ráját would be allowed to take possession of all the Rohela territory. When the Sayyad got to Almorah and delivered the letter and the rare presents, the Ráját gave the Wazír's wakil his dismissal, saying it was inhuman not to feed those who took refuge with you. He ordered his managers to direct the villagers near the Nawáb's entrenchment to carry loads of grain on their heads to the camp. He gave the Sayyad an answer to the letter and sent him back. The Sayyad had not returned before several thousand hillmen appeared in the camp with head-loads of grain, which they at once offered for sale. The men in camp, who were suffering all the pangs of starvation, looking on the arrival of this grain, which to them was "like sweetmeats without milk," as a special mark of the divine grace, bought each according to his need, and having made a prostration of thanksgiving, proceeded to cook and eat. After this the Sayyad returned with a gracious answer, the contents of which were not communicated to any one but the chief personages.

When the Wazír had crossed the river Ganges, he despatched Mulhár Ráo and his troops, giving them strict injunctions to follow up the enemy. But the Mahratta leaders, true to their agreement, made excuses for delay, saying to the Wazír that, as Tántiá-Gangadhár and the Mughals with a large force were already in pursuit of the Afgháns, it would be better to wait and see first what direction the enemy took. When trusty reports were received, a forced march could be made. Soon after, it was reported that Nawáb Ahmad Khán and the Rohelas had gone to the foot of the hills. The Mahrattas made forced marches, till they reached within three *kos* from the hills occupied by the fugitives. At that distance they encamped, and the Wazír pitched his tents near the village of Chaukya.* Every day the Wazír, keeping to the rear himself, sent the Mahrattas forward to fight. At sunset they all returned to their camp. After having been delayed some time on the road, the Wazír's artillery arrived, while these daily contests still continued. Next day at sunrise, he mounted his elephant and brought up his guns opposite Ahmad Khán's battery. The firing, however, was so high that all the shot passed quite over the battery attacked and fell beyond the

* This name I have not traced. Hamilton (p. 110) says the Afgháns went to "a short distance above Lall Dong."—The life of H. R. K. (p. 42) says, the encampment was at Chilkya, which is about 22 miles north-east of Kúshipúr.

camp in the plain behind. In this plain, which was about a square *kos* in extent, the shot fell like a heavy shower of hailstones. The firing lasted from morning till night. Night had hardly fallen, when, as a precaution, the cannon were dragged away and placed near the Wazír's camp. These tactics were pursued for two months, without any effect having been produced on the Paṭháns. A stream of water which flowed from the hills hindered the Wazír's operations. The Rohelas had dug a channel from this stream, and they led the water all round their entrenchments. Mulhár Ráo and Súraj Mall Jáṭ tried in vain every expedient to discover a way of entrance.

During this time, the Wazír's agent at the Emperor's Court had written, in one of his news-letters, that spies had reported to his Majesty the approach of Ahmad Shâh Durráni, who was coming to the aid of his fellow-clansmen, the Afgháns. The Durráni had issued orders to the Afgháns of the hill-country to gather on the banks of the Indus and there await his arrival. The letter went on to say that, when his Majesty heard this report, he became very anxious and said to Nawáb Firúz Jang, "What shall we do? Safdar Jang, with my troops and the landholders from all parts, is gone on a foolish campaign, nor does it yet appear that he has either overcome Ahmad Khán and the Rohelas, or that he is likely to overcome them." Firúz Jang, making a low obeisance, said his presentiments were coming to pass, and he had already warned the Emperor. As Názir Jáwed Khán's advice had been followed, it would be best to ask him now what should be done. The Emperor admitted that this was true, yet since man was compounded of error, he thought that it was not fitting for Firúz Jang to refuse to give advice. Then Firúz Jang said he thought a note *(shuḳḳa)* should be sent to inform Safdar Jang that, owing to Ahmad Shâh Durráni's approach, it was desirable to make peace with Ahmad Khán. He proposed to confide the message to 'Ali Ḳuli Khán, the six-fingered.* Accordingly 'Ali Ḳuli Khán had, the Wakil reported, been sent to Safdar Jang with a *shuḳḳa* from the Emperor.

Attack by the Atíths of Rájah Indar Gir.

The Wazír concealed this intelligence even from his greatest intimates. Next day, he sent for Mulhár Ráo, Ápá Sendhiá, Tántia-Gangádhar and Súraj Mall Jáṭ. He said to them that, though two months had elapsed they were no further advanced than on the first day, in fact, they had given no assistance. Ápá Sendhiá, anticipating the others, said in reply, that they were used to fight in the open, not against entrenchments or for-

* Wali-ullah, p. 175, shows that this was an epithet applied to 'Ali Ḳuli Khán, Wálih, Dághistáni, for whose biography, see the "Khizána 'Amira," p. 446.

tresses. Indar Gir Atíth then said, that their enemy was in the open, not in either entrenchment or fortress. The only obstacle was the water. Now, there were two corners, where there was no water, one to the east and one to the west; that to the east was the battery of Najíb Khán and Sayyad Ahmad, that to the west was defended by Nawáb Ahmad Khán. If any one chose to take the slightest trouble, they would gain a victory. Ápá Sendhiá said to him, "You, too, are in the service of the Nawáb Wazír, wherefore do you not take this trouble you speak of?" Rájah Indar Gir said, that the next day he would make an assault on the battery of Nawáb Ahmad Khán, and he would take it unassisted. By the Wazír's good fortune he would bring Ahmad Khán alive a prisoner, or else he would bring his head on the point of a spear. The Mahratta leaders said, that nothing could be better than this, and taking leave of the Wazír they rose and departed. When they reached their tents, Ápá Sendhiá sent word to Nawáb Ahmad Khán that he might expect next day an attack by Rájah Indar Gir Atíth, who would, they hoped, be killed or defeated.

When night had passed and the sun arose above the eastern horizon, Rájah Indar Gir's fifteen thousand men, horse and foot, all Atíths and Nágás, each having a musket and rockets, were passed in review by the Wazír and despatched to the assault. Before he set out, Indar Gir requested the Wazír to make a feigned attack with the Mughals and "Sherbacha" in the direction of Najíb Khán's and Sayyad Ahmad's outwork, in order to draw all the Paṭháns to that quarter, leaving Ahmad Khán's battery unprotected. The Wazír did as requested, and the fighting began. Rájah Indar Gir posted himself in a hollow and awaited a favourable moment. The Mughals did their best. But Najíb Khán maintained his position, and called to his friends to cease firing and await the near approach of the enemy, and then meet them with the sword. Najíb Khán sent a message to Mullá Sardár Khán and Donde Khán, asking them to leave their own posts, thinking the main attack was directed against him. Háfiz Rahmat Khán, on seeing that Najíb Khán was attacked, rode off to Nawáb Ahmad Khán. Before he arrived Ahmad Khán had mounted his elephant and had taken up position in his battery. Háfiz Rahmat Khán came up and represented that the chief attack that day was against Najíb Khán. The Nawáb replied, that the attack on Najíb Khán was entirely a feint, the real attack by the Atíths would be made there, on Ahmad Khán's entrenchment. He therefore requested Háfiz Rahmat Khán to return to his own battery. Then the Nawáb ordered all his own leaders to be on the alert. At an hour and a half before sunset the Atíth's troops began to show in the open. The Paṭhán commanders asked for leave to draw up their men in battle array. The Nawáb told them to offer up a prayer

(Fútaha-i-khair) and then go at the enemy. All the leaders and Paṭháns, raising their hands to heaven, offered up a prayer and went at the Atíth. Both sides began with musketry fire and discharged rockets. For nearly an hour, the fight was thus continued; at length, the Paṭháns began to advance, and coming to close quarters, made play with their swords. Under the force of the attack the Atíths began to withdraw. The chela of Indar Gir, who commanded on the part of his Guru, seeing that the Atíths and Nágás were turning their faces, dismounted from his horse and attempted to rally them. He called on his personal followers to draw their swords and make a rush. They obeyed this order and fought most bravely. Many were killed, the rest were scattered. Then the Atíth commander himself, sword in hand, came to the front. He was met by a Paṭhán with bared sword. After some thrusting and parrying, the Paṭhán cut the Atíth down, and severed his head from his body. When the Atíths saw that their leader was dead, they took to flight.

Rájah Indar Gir, perceiving the turn affairs had taken, quitted the field of battle. The Paṭháns followed in pursuit up to the entrenched camp of the Wazír, where they arrived about sunset. The sun having set, darkness succeeded, so that one man could not recognize another. Soon the Nawáb's messenger came up with orders recalling them from the pursuit. They set fire to the Wazír's gun-carriages, and with the baggage they had plundered returned to their entrenchments. The principal men presented themselves before the Nawáb and offered him gifts in honour of the victory. The Nawáb gave them due praise and thanks in a kind and gracious manner.

The Wazír, when he heard of Indar Gir's defeat and the death of many Atíths, became greatly perturbed, issued from his tent, got upon his elephant and set out towards Káshipur. At once, on hearing of the Wazír's flight, Mulhár Ráo and Ápá ordered out a large force and followed him. On reaching Káshipur, they drew up and cut off his retreat. Then going to him, they said that, although the Paṭháns had repulsed Indar Gir, there was no occasion for this excessive timidity. Indar Gir had but received the due punishment of his pride. In short, Mulhár Ráo and Ápá Sendhia prevented the Wazír from carrying out his foolish intentions, which were quite contrary to the dignity of his station. Then the Wazír marched back and re-occupied his former encampment. The daily attacks with artillery were at an end, owing to the gun-carriages and material having been burnt by the Paṭháns.

Visit of the Almora Rájah.

At the suggestion of Sayyad Ahmad, the Rájah of Kumáun agreed to pay a visit to the camp. Taking with him several thousand infantry, the

Rájah, seated on a gilt throne and clad in jewelled raiment, descended from the hills. Nawáb Ahmad Khán went out to meet him, and when they came close, they both saluted at the same moment. The Nawáb brought the Rájah to his own quarters and seated him on a separate *masnad.* Presents were then brought of all the choice products of Hindustán, including an elephant. Of all the things placed before him, the Rájah selected two *rúmál* and refused the rest. Sayyad Ahmad knew the Rájah's dialect, and whatever the Rájah said was explained by him to Nawáb Ahmad Khán. After a short interval, the Rájah rose and taking his leave of the Nawáb went to his own camp. Next day the Nawáb returned the Rájah's visit. The Rájah came out in state to greet him, and they proceeded in the most friendly manner, hand in hand, into the Rájah's tent, where the Nawáb was conducted to his seat on a costly *masnad.* He was then presented with hill products, such as hawks and falcons, and other birds used in falconry, bags of musk, *chaur* (?) and gold ingots, called in Hindi *suna-sungad,** which have a perfume like essence of roses. There were also several hill ponies (*Túngan*) of various colours, the like of which would not often be found. The Rájah also gave several kinds of jewels, rare and of great price. At first the Nawáb refused those gifts. The Rájah, seeing that his present was not accepted, said to Sayyad Ahmad in his own tongue that he knew the things were not of sufficient value, but he hoped that to give him pleasure the Nawáb would accept them. Then the Nawáb, to please him, accepted all the things. The day after this, the Rájah took his leave and returned to his home in the hills.

Negotiations through 'Ali Ḳuli Khán.

Meanwhile the difficulties of his undertaking were troubling the Wazír day and night. About this time, 'Ali Ḳuli Khán, the six-fingered, the 'Abási, a descendant of the kings of Wiláyat, reached camp with the imperial letter, under the Emperor's own signature, directing that peace should be made with Ahmad Khán. The *shuḳḳa* was handed to the Wazír, and the messenger delivered the Emperor's verbal message, with reference to the approach of Ahmad Sháh Durráni. The Wazír represented to 'Ali Ḳuli Khán that, if the first proposals for peace proceeded from him, his reputation would be gone for ever. He asked advice as to how negotiations should be begun. 'Ali Ḳuli Khán replied that he and Ahmad Khán Ghálib Jang, were old friends and acquaintances, that if the Wazír

* Perhaps the same as referred to in the following passage, "In Garhwál there "is a vein of iron pyrites, which the people call '*sone-ká-pathar*,' or gold stone, and "sell them to the pilgrims to Badrinath at high rates." Economic Mineralogy of Hill districts of N. W. P. by E. T. Atkinson, Allahábád, 1877, p. 30.

approved, he would seek an interview and turn Ahmad Khán's mind towards peace. The Wazír was highly delighted at this suggestion.

'Ali Ḳuli Khán sent off a formal letter stating how desirous he was of paying a visit to Ahmad Khán. On receiving it, Ahmad Khán sent for Háfiz Rahmat Khán and the other Rohela leader, and informed them of its contents. They all agreed that it would be well for the Nawáb to receive the proposed visit, as 'Ali Ḳuli Khán was his friend. Ahmad Khán sent a reply saying, that there had been no need to ask for leave, his house might be looked on by 'Ali Ḳuli Khán as his own. 'Ali Ḳuli Khán having informed the Wazír of this favourable reply, the Wazír made him swear by his head that in no way would he let Ahmad Khán know of the desire to make peace. 'Ali Ḳuli Khán said, he might feel quite at rest, for the degradation of the Wazír would, in his opinion, be a dishonour to the Emperor.

On 'Ali Ḳuli Khán approaching the Nawáb's battery, the Nawáb's son, Mahmúd Khán, was sent out to escort him. On their meeting, they embraced affectionately, and then mounting the same elephant, they started for the Nawáb's tent. The Nawáb rising from his seat advanced to the edge of the carpet, and there they embraced. Thence hand in hand they walked to the *masnad*. A friendly conversation began and lasted a long time. 'Ali Ḳulí Khán was then conducted to a tent, which had been prepared for his repose, where every kind of food was made ready and sent to him. In the evening Nawáb Ahmad Khán walked to his guest's tent. At first they talked as friends and then they turned to business. The note, which the Emperor had written to Ahmad Khán with his own hand, was brought out. Taking it in his hand, Ahmad Khán placed it on his head, rose from his seat, turned his face towards Delhi and made a low obeisance. He then read the note. The contents were made known to no one but the principal leaders. It was only after a time that, through the commencement of negotiations, it was seen that the Emperor had recommended peace. Ahmad Khán, after he had read the letter, asked what he was expected to do. Ali Ḳuli Khán told him he should send his son, Mahmúd Khán, and Háfiz Rahmat Khán back with him, in order that the world might see that, although the Wazír had failed, yet as "*ul-amr faut ul-adab*" (an order supersedes ceremony), he, Nawáb Ahmad Khán, had obeyed the Emperor and had sent his son and the principal leader under Sa'dullah Khán to negotiate with the Wazír. In this way the Wazír's honour would be saved, and thereby the Emperor's dignity preserved. Ahmad Khán objected that in this matter he could not act till he had consulted others.

Accordingly, Nawáb Ahmad Khán mounted and went to Sa'dullah Khán's camp. Háfiz Rahmat Khán and the others were sent for, and the Nawáb laid all the facts before them. Mullá Sardár Khán, the oldest present, took up the word and enquired what force Áli Ḳuli Khán had with him. Ahmad Khán asked what he meant by that question. Sardár Khán replied that a strong powerful leader was required, who could oppose the Wazír, if need arose—one who could enforce the terms granted. He preferred making overtures through Mulhár Ráo and Ápá Sendhiá. But, under no circumstances, could he approve of allowing the Nawáb's son to go to the Wazír. Háfiz Rahmat Khán might go or not as he pleased, for he was a private friend of the Wazír's. Ahmad Khán, turning to Sardár Khán, said he highly approved of his remarks, and he would act accordingly. He then rose and returned to his own quarters. Next day, he said to Nawáb Áli Ḳuli Khán that, though he fully trusted him personally, the Rohela leaders objected to allowing his son to go to the enemy's camp. On hearing this, Áli Ḳuli Khán said, "By God, your advisers are sharp-witted "and far-seeing. My wish was as they have counselled, my heart's desire "has been fulfilled, for all I wanted was to turn your thoughts towards "peace." The Nawáb replied, "My friendship to you is firm like an engrav-"ing on stone."

After this interview, Áli Ḳuli Khán took his departure and returned to his own camp. He then sought an interview with the Wazír and related in detail all that had passed. He pointed out that, although he had brought Ahmad Khán to entertain thoughts of peace, the condition was that the negotiations be conducted through Mulhár Ráo and Ápá Sendhiá. Khánde Ráo must therefore be sent to bring in the Nawáb's son and Háfiz Rahmat Khán. The Wazír sent for Mulhár Ráo and Ápá Sendhiá and requested them to arrange for bringing in the Nawáb's son. On his arrival they could come to a decision. The two Mahrattas professed their willingness, if nothing was intended which could force them to act afterwards in opposition to the Wazír. The Wazír out of regard to his own honour was obliged to promise that no treachery was intended. Then Mulhár Ráo sent his son, Khánde Ráo, with an escort, to conduct the Nawáb's son to the Wazír's camp. Ápá Sendhiá had already sent word to Ahmad Khán, desiring him to make no objections to sending off his son.

Meanwhile Khánde Ráo and the escort had come near the battery and drew up close to it. Word was brought of his arrival. Forthwith Mahmúd Khán was sent for and, after the Nawáb had whispered in his son's ear a few words of advice, two hundred trusty horsemen were ordered out to accompany him, one of them being our author, Hisám-ud-dín. On the

part of Sa'dullah Khán was deputed Háfiz Rahmat Khán. When Khánde Ráo saw the young Nawáb approaching, he descended from his elephant, and embraced him with the greatest respect. They mounted their elephants again, Khánde Ráo taking up a position behind the young Nawáb and in this order they went forward, till they came close to the Mahratta camp. Mulhár Ráo, Ápá Sendhiá, Tántiá and others rode out to greet him. When they came opposite the Sáhibzáda, they all dismounted and embraced him. After this, Mulhár Ráo took him to a tent and seated him on a *masnad*, the Mahratta leaders taking place around him. Presents were then laid before him of choice products of the Dakhin. A few were accepted, the rest, including a horse and an elephant, he left with them.

The Mahratta leaders next proceeded to the Wazír and desired that persons of suitable rank might be sent to conduct the young Nawáb to the Wazír's presence. Orders were given to Nawáb Sálár Jang* and Ali Kuli Khán. The Mahrattas returned with them, and on reaching the proper distance they drew up. On hearing of their arrival, the young Nawáb and Háfiz Rahmat Khán marched out of camp. When he saw them in the distance, Nawáb Sálár Jang began to advance, and coming near he descended from his elephant, and they embraced. They then returned together towards the Wazír's camp. At a little distance the Sáhibzáda halted, whereupon Mulhár Ráo and Ápá Sendhiá asked the reason. Mahmúd Khán requested them to precede him and obtain the Wazír's consent to the admission of his escort, for he wished the whole of his companions to be present at the interview. They went on as desired and came back with the necessary permission. Ismá'il Khán was at the same time told to go to the gate and see that no opposition was offered to the entry of the Nawáb's followers.

The Mahrattas then escorted the Sáhibzáda towards the Wazír's audience tent, where he was seated awaiting them. The enclosure (*surácha*) had three courts. The Sáhibzáda traversed two courts, and then dismounting from his elephant, he got into a *palki*. The other chiefs got off their elephants at the gate of the first court, and there entered their *palkis*. At the third gate the Sáhibzáda stopped and told his followers to enter first. When they had done so, he followed and halted. Then Mulhár Ráo and Ápá Sendhiá advanced to the spot, helped him out of his *palki* and went forward with him.

On reaching the edge of the carpet, he made a low obeisance. The Wazír exclaimed, "Welcome!" and extending both hands clasped him to

* I presume this must be the third and youngest son of Isháḳ Khán Mutaman-ud-daula, whose daughter was married to Shuja'-ud-daula. Najm-ud-dín Isháḳ Khán, the eldest son, was killed at Rám Chatauni, see p. 74.

his breast and gave him a kiss on the forehead. This mode of salutation is, among the Mughals, a proof of the greatest affection and condescension. Then the Wazír invited him to take a seat at his right hand, on a *masnad* placed on a line with his own. The Sáhibzáda, taking some gold coins in his hand, presented them as an offering. The Wazír graciously remitted the "*nazar*," but the Sáhibzáda insisted, when the Wazír smiled and accepted the gift. After this the young Nawáb sat down, and the Wazír took his hand and, holding it to his breast, began a friendly conversation. In the course of it, the Wazír said "Paṭháns do not flee, how is it your "father has run away so far?" Mahmúd Khán replied, "My father is only "a half-breed." The Wazír asked what that meant. The Nawáb explained, thus, "My father's mother was a Mughal and his father a Paṭhán, when "he follows his father he fights boldly, and when he takes after his mother's "qualities, he runs away." By this answer the Wazír was silenced, for he was himself a Mughal. In a short time, the Wazír turning to Mulhár Ráo and Ápá Sendhiá, said he had not eaten any food, would they kindly take their leave of Bábá Mahmúd Khán. The two leaders rose, mounted and went away to their own camp. The Wazír took Mahmúd Khán and Háfiz Rahmat Khán to his private tents and called for food. It was sent to the guests through Baḳá-ullah Khán. When the meal was finished, the Wazír directed Ismá'il Khán to pitch tents for their reception on the right side of his own private enclosure. As soon as the tents were ready Mahmúd Khán and Háfiz Rahmat Khán took their leave.

When one watch of the night had passed, several thousand armed Mughals, by order of the Wazír, took up their position round the tents of the visitors. When the Nawáb's people became aware of this, each man went separately and told his own master. The Mahrattas' spies were of opinion that some treachery was on foot, and in great agitation they started to report to their chiefs. Khánde Ráo, as soon as he heard the report, without referring to his father, mounted and rode in hot haste to the Wazír's camp. There he saw that one thousand Mughal troopers were drawn up round the young Nawáb's tents. Immediately he gave orders to his troops to attack those despicable fellows and disperse them. Hearing these orders, the Mughals made off. Entering the enclosure, Khánde Ráo found Mahmúd Khán and Háfiz Rahmat Khán with all their men drawn up, sword and shield in hand, ready for the fray. Seeing Khánde Ráo, the young Nawáb laughed and said, "I prayed God that I might get "near the Wazír, and the Omnipotent has heard me. Now my wish is, if "you will join me with your brave followers, to give the Wazír a taste of "my quality." Khánde Ráo replied, that the Wazír should be left to himself to bear the disgrace of what he had done, and that Mahmúd Khán

ought to come away at once. They all mounted and rode off together; and leaving the Mahratta camp on the left, they turned towards the foot of the hills. When they were not far from Ahmad Khán's camp, Khánde Ráo took his leave, and returning made a minute report to his father.

Before Khánde Ráo got back, Mulhár Ráo and Ápá Sendhiá had been to visit the Wazír, and they told him how wrong it was to ask their intervention when intending treachery. They used some very strong language. The Wazír expostulated mildly, asking them what they were thinking of to use such hard words without any enquiry. The truth was, he said, easily found out by asking 'Ali Ḳuli Khán, a trusted friend of Ahmad Khán. When 'Ali Ḳuli Khán came, the Wazír requested him to relate the facts. He stated that, knowing the Wazír's men to bear a deadly grudge to the Afgháns, he feared that they might attempt to use force, by which the Wazír's good name would be destroyed, he had therefore asked the Wazír to post a guard of a thousand Mughal horse round the tents of the Paṭhán guests. This explanation was received as quite satisfactory.

Intrigues in the Paṭhán Camp by Mahbúb 'Alam.

After the failure of the first negotiation, another plan was hit upon. Mahbúb 'Alam, a native of Shamsábád, was a man of learning and intelligence, who, through Mír Ḳudrat 'Ali Khán, had obtained employment in the Wazír's service. On account of his wisdom, the Wazír thought highly of his advice. One day the Wazír said to him "I have tried every device "to overcome these Paṭháns, but the words of the sacred writing have been "fulfilled 'the few shall overcome the many.' As you are a clever man, tell "me in what way I can best overcome my enemy." The Sayyad made a low bow and said, "This man of mean understanding has a plan, but hitherto "he was afraid to disclose it, for he is not one of the old servants, and, may "be, this slave's remarks would not meet with approval." The Wazír replied, that he thought more of him than he did even of his old servants, and he begged him to express his ideas without ceremony, for there was nothing to fear. Then the Sayyad went on, "Gracious master, peace be on "you! the first question is this, does my lord seek the death or capture of "Ahmad Khán alone, or does he rather aim at extirpating the whole race?" The Wazír answered, that his enemy was Ahmad Khán; with the others he had nothing to do; but as they had joined Ahmad Khán, he had been led to attempt the destruction and extirpation of the whole Paṭhán race. The Sayyad then asked, what would happen to the other Paṭháns if they quitted Ahmad Khán and presented themselves to the Wazír? The Wazír declared that, according to their merits and station, he would treat them with consideration; to those who were men of rank he would give dignities

and grants of land revenue ; the rest he would entertain in his army. The Sayyad then said, that if such were the Wazír's intentions, then in his humble opinion it would be well to write *parwánahs* to each man separately under the Wazír's own seal. These *parwánahs* should then be made over to him, Mahbúb 'Alam, with a written order in such terms as to the Wazír might seem meet.

The Wazír directed Sayyad Manavvar to convey an order to his secretary to make out *parwánahs*, according to the instructions of Sayyad Mahbúb 'Alam, to whom those written orders, when ready, were to be made over. Ḳudrat 'Ali Khán and Mahbúb 'Alam then took their leave and went to the secretary. After the orders were written out, they were taken to the Wazir for approval ; they were then delivered to Mahbúb 'Alam at Mír Ḳudrat 'Ali Khán's tent.

Now Mír Muazz-ud-dín, son of Sháh Khaṭír-ud-dín Gwáliyári, was a brother's son of Hisám-ud-dín's father. He was in the direct employ of the Emperor, but he happened to be present at that time in the Wazír's camp. The Ḳudrat 'Ali Khán above referred to had a community of belief with him, and looked up to him with great respect. The reason was, that Ḳudrat 'Ali was a descendant of Sayyad Hasan Dánishmand of Dáipúr. This Sayyad Hasan Dánishmand was himself a successor *(Khalifa)* of Mirán Hamíd-ud-dín Hazrat Muhammad Ghaus Gwáliyári. By chance. Mír Muazz-ud-dín paid a visit to Ḳudrat 'Ali Khán's tent. Mír Mahbúb 'Alam, through the said Khán, had struck up a friendship with Sayyad Muazz-ud-dín, and in conversation he had learnt that he was a cousin of Mír Hisám-ud-dín, and was further his devoted friend. Accordingly, he asked Muazz-ud-dín to write a letter to Hisám-ud-dín, asking why he was throwing himself away in company with Ahmad Khán, who would soon be slain or captured ; that on reading the letter, he should at once desert alone to the other side, without caring for his property, which would be fully replaced. As soon as he joined he would, by God's grace, be presented to the Wazír, from whom he would receive a title and a grant of land revenue. Mír Muazz-ud-dín Khán, as requested, wrote a letter to the above effect, and made it over to Mír Mahbúb 'Alam. The latter also wrote letters from himself to all his acquaintances of Mau and Shamsábád, stating that he had interceded for them with the Wazír, who had promised to entertain them all in his own service, in token of which he had caused *shukkas* (notes) to be written to them, impressed with his own special seal. He prayed them to make no delay, but come over at once. Putting up together all the *parwánahs* and his own letters, he despatched them by a messenger in the Wazír's employ, under the charge of his own private servant, Bhái Khán, to Nawáb Ahmad Khán's camp.

Sáhib Dád Khán Khaṭak and Mír Mahbúb 'Alam had both been together in the service of Shamsher Khán, chela, and from being together, a firm friendship had sprung up between them. They had two bodies but one heart. In fact it was in reliance on Sáhib Dád Khán that Mahbúb 'Alam had undertaken this affair. Bhái Khán, Khidmatgár, found the tent of Sáhib Dád Khán Khaṭak, and made over to him the whole of the *parwánahs* and letters. He then asked his way to the tent of Hisám-ud-dín, to whom he delivered the note from Mír Muazz-ud-dín Khán and demanded a reply. When Hisám-ud-dín had opened and read the letter, he sent a reply to the following effect: "You think I have got into a "difficult position by espousing Nawáb Ahmad's Khán's cause. This idle "thought you must put far from you, for one hundred thousand brave men, "more or less, with their leaders, all carrying on their bodies their own "grave clothes, are in the train of Ahmad Khán and prepared to conquer "or to die. Now, to slay those who already believe themselves dead, is a "task of extreme difficulty.

Har kih dast-i-khweshtan az ján ba-shust
Khúd ba-mánd, o dushman-i-khúd rá ba-khusht
Murdah míyábad niját az dast-i-maut
Zinda-há úrá namáyand jumla pusht.

"Even if it were true that the Wazír would shortly slay or cap-"ture the Nawáb, I ask you one question:—Suppose that the Wazír "were in danger from Ahmad Khán, and I wrote to you, requesting "you to forsake the Wazír, and save your life by coming over to our "side, I ask if you would not hold it your duty as a leader and a "Sayyad to prefer death to disgrace? You would not forsake the Wazír, "so what you would not do yourself, you should not advise others to do. "I beg to be excused from obeying such a foolish request." This answer was made over to Bhái Khán, and he returned to Sáhib Dád Khán's tent. The latter's answer was as follows:—"I have distributed the *parwánahs* "and letters; hereafter I will report the result. I object to keeping the "messenger here, as it will get me into trouble, I therefore send him "back." The messenger received these two letters and set out on his way back.

Now the thieves and plunderers among the Rohelas, who infested the camps of Ahmad Khán and Sa'dullah Khán, were unequalled in the arts of thieving and highway robbery. They were in the habit of hiding on the right and left of the batteries. At night they used to repair to the Wazír's camp, where they seized horses, camels and equipage of all sorts, with which they returned to their own camp. After disposing of the property, they

would return to their hiding-places. By chance, the carrier of the two letters passed close by where these robbers were concealed. The thieves seized him, and carrying him off to Nawáb Ahmad Khán's quarters, reported the matter. The Nawáb called in the arrested messenger and asked on what business he had come to the camp. The man, in a great fright of losing his life, told the whole story, as already related in detail. He ended by delivering up the two letters he was carrying back. When the Nawáb had looked at these two letters, he sent for Hisám-ud-dín. Hisám-ud-dín had already heard that the Afgháns had arrested the messenger and had carried him before the Nawáb.

On his reaching the presence, the Nawáb said to him, "O Hisám-ud-"dín! who is this Muazz-ud-dín with whom you correspond?" Hisám-ud-dín replied, "Gracious Master! he is my brother." The Nawáb asked what he had written, and he answered that what he had written was lying before the Nawáb, there was no need to repeat it. Rustam Khán Bangash, Háji Sarfaráz Khán and Mustaját Khán were present. Addressing them, the Nawáb said—"This Hisám-ud-dín is a man of noble race, who respects the "salt he has eaten, see what a good answer he has written to his own "brother." He then began to read the letter aloud to them. They were all loud in their expressions of praise. Then turning to Hisám-ud-dín, he said, "You have fully acted up to what I expected from you; please God, "I will in time repay you for being thus true to your salt." Sending for Háfiz Rahmat Khán, Donde Khán, Mullá Sardár Khán, Fath Khán and Sayyad Ahmad, the Nawáb told them everything that had occurred. Their opinion was demanded. Sayyad Ahmad stated that his subordinates were posted everywhere from the foot of the hills down to Pílíbhít, he would write telling them, that if any one from the camp passed, in an attempt to desert, they should without fail slay him and appropriate his goods. Then the five Rohelas left. The Nawáb directed Háji Sarfaráz Khán to turn the captured messenger out of the camp, which was done accordingly.

Renewal of Negotiations, followed by peace.

Affairs on the enemy's side were meanwhile as follows. Some Rájah of the west country had written to Mulhár Ráo and Ápá Sendhiá that Ahmad Sháh Durráni was on his march to help the Afgháns and had already crossed the Indus. He was reported to be advancing by rapid marches. This information caused great anxiety to the Mahratta leaders, and they assembled for consultation. They came to an unanimous determination and then proceeded to the Wazír. They reproached him for having concealed from them the report of Ahmad Sháh Durráni's approach.

They said he was aware of the state of both his own troops and of the Mahratta army, that they had become dispirited and hopeless from the difficulty of the task before them. Further, that owing to the effects of the hill water, death came on them unawares. As life is dear to all, a complete panic had arisen, and should the men hear that Ahmad Sháh was coming, they would begin to desert. It was for the Wazír to decide and for them to obey. The Wazír was thrown into great perplexity, and after a considerable pause he said he threw the responsibility of deciding upon them. The Mahrattas advised him to sheathe the sword and send off 'Ali Ḳuli Khán to Ahmad Khán with a message. He should say that, by the Emperor's orders, the Wazír drew back his hand from war; Ahmad Khán too should therefore respect the Emperor's word and make terms. Ahmad Khán should be allowed to retain the ancient territory, which had belonged to his father and brother, on condition of presenting a fine (*nazrána*) of 30,00,000 rupees. As security for the payment of this fine, he should be required to make over half the territory, till the whole of the money was paid. These proposals were agreed to by the Wazír, and he requested the Mahrattas to name one of their trusted agents to go with 'Ali Ḳuli Khán. Mulhár Ráo and Ápá Sendhiá named Tántiá Gangádhar, their Diwán.* The two messengers then departed.

But, unknown to the Wazír, the two Mahratta leaders had instructed Tántiá to inform Ahmad Khán, at a fitting opportunity, that they wished him to accept without quibble the terms to be named by 'Ali Ḳuli Khán. The aspect of affairs made this desirable, but they were still his well-wishers and they hoped he would depute his son to hold an interview with the Wazír. On reaching Ahmad Khán's camp, 'Ali Ḳuli Khán proposed that they should visit the Nawáb together. Gangádhar excused himself and said he would pay his respects the following day. 'Ali Ḳuli Khán went on to Ahmad Khán. After some ordinary conversation, business was begun, and 'Ali Ḳuli Khán delivered his message, mentioning that Gangádhar, the representative of the Mahrattas, would pay the Nawáb a visit the next day. Tántiá visited the Nawáb the following day, and the Rohela commanders were sent for. Mulla Sardár Khán was of opinion that the matter should be left in the hands of Mulhár Ráo and Ápá Sendhiá. To this the Nawáb consented, 'Ali Ḳuli Khán and Tántiá Gangádhar were sent for, and Ahmad Khán said to them that out of a desire to satisfy those two Mahratta chiefs, he agreed to make over half his territory, till such time as the sum of thirty lakhs of rupees, the fine imposed by the Emperor, should be realized.

* Apparently the same as Grant Duff's *Gangádhar Yeswent* (Bombay ed., pp. 338, 340). By the usage of the Dakhin, *Yeswent* would be his father's name. Grant Duff does not give him the epithet of *Tántia*.

Ahmad Khán then proceeded to 'Ali Ḳuli Khán's tent, and there he declared that it was only in obedience to the Emperor that he had consented to terms of peace. He sent for a secretary, and caused a letter to be written embodying the terms proposed by the Mahratta leaders. This letter he made over to Tántiá, telling him verbally that it was on his responsibility that the young Nawáb was permitted to go to the Wazír. One account states that the terms were engraved on two copper plates, which were interchanged between the Mahrattas and Ahmad Khán.

When Mahmúd Khán and Háfiz Rahmat Khán approached the Mahratta camp, the leaders, Mulhár Ráo, Ápá Sendhiá, Paṭel Ráo, Antámán Gir and others came out to meet them. Next day Mulhár Ráo and Ápá Sendhiá rode up to a short distance from the tents and sent on Tántiá Gangádhar to ask the visitors to come with them to the Wazír. After the interview was over, the Wazír ordered his quarter-master-general (Mír Manzil) to send on his tents, as he intended to march. Next morning the march commenced, and after some days they reached the banks of the Ganges. Then the Wazír directed Mulhár Ráo and Ápá Sendhiá to proceed to Kanauj, while he went on to Lakhnau, taking with him Mahmúd Khán and Háfiz Rahmat Khán whom he proposed to dismiss, when the business had been settled. As directed, the Mahrattas crossed the Ganges and quartered themselves in Kanauj. But Gangádhar, their Diwán, was sent with the young Nawáb, at the head of ten thousand horse.

Soon after the departure of the opposing army, Nawáb Ahmad Khán and Nawáb Sa'dullah Khán, leaving their entrenchments in the hills, put up their tents where the Wazír had been encamped. Thence they marched by stages to Anwalah. In that town there was a halt of several days. Resuming his march, Ahmad Khan set out towards Farrukhábád—Ahmadnagar, where he soon arrived and entered the fort. The date of his return must have been some time in the early part of the year 1752.

During this time the Wazír had arrived at Lakhnau. Four or five days afterwards, he sent for the young Nawáb and Háfiz Rahmat Khán. First he bestowed on Mahmúd Khán a *khila't* of seven pieces and made over to him a grant confirming his father's territory to him. He also conferred on him the title of Ḳáim Jang. He then gave him leave to return to Farrukhábád. Háfiz Rahmat Khán also received a dress of honour. Then a grant was handed to Tántiá, making over half of Ahmad Khán's territory to the Mahrattas, till the Emperor's *nazarána* was paid, they receiving the country in satisfaction of the arrears of pay due to them by the Wazír.

Mahmúd Khán and Tántiá taking their leave marched westwards, and Háfiz Rahmat Khán started for Anwalah. When the young Nawáb drew

near to Kanauj, all the Mahrattas came out to meet him and prepared entertainments. After a stay of two days, he resumed his march to Farrukhábád. On reaching his destination he visited his father, and from him he received the house of Ja'far Khán as his dwelling. After this the Wazír came from Lakhnau to Kanauj; thence taking with him Mulhár Ráo and Ápá Sendhiá, he moved by way of Itáwah towards Delhi.

Some time after this, Ahmad Khán sent Muhammad Jahán Khán to Delhi, to fetch his wife and family. Dulhin Begam accordingly returned to Farrukhábád. Then the Nawáb's brothers, brother's sons, and chelas, with their families, great and small, and all the ryots, returned each to his own place of abode in the different quarters of the city. Sáhib Begam, the widow of Ḳáim Khán, also returned and took up her abode in the fort of Amethi; and Máliya Begam, the Bibí Sáhiba, occupied the Buland Mahal, which had formerly been in the possession of her son, Ḳáim Khán.

Ahmad Khán marries again.

As the Nawáb's affairs were now prosperous, he gave himself up to amusement and pleasure and came to the determination to marry a new wife. His courtiers told him of a young girl who was, they considered, fitted to be his bride. A man of noble family by both parents, a descendant of Nawáb Khán Jahán Khán, who held high rank in the reign of Sháhjahán, had by unstable fortune been reduced to poverty. By accident he had taken up his abode in the town of Shamsábád. After a time, he had departed from this world, leaving a widow and a young daughter, named Khair-un-nissa. It so happened that Yáḳút Khán, Khán Bahádur, had obtained this girl from the widow and had adopted her as his own. She was still a virgin and living in the house of the deceased Khán. The Nawáb hearing this story fell in love with her without seeing her. He sent for her and placed her in the Khás Mahal; and, after the wedding preparations were made, he was married to her. From that time he never left her for a moment. These words were always on his lips—

Sharáb do-sálah o ma'shúk sezdah sálah,
Hamín bas ast baráe suhbat-i-saghír o kabír.

"I like my wine two years old, and my mistress to be sixteen."

After a time, in the year 1171 H. (Sept. 1757 to Sept. 1758), a son was born to her and gifts were distributed to the poor. The Nawáb opened the Ḳurán to search for the child's name. The letter D was the result. He then sent for astrologers and ordered them to draw up the child's horoscope. The name fixed upon was Daler Himmat Khán. An announcement of the event was sent to the Emperor with fitting gifts. There were great rejoicings

and for six days open entertainment continued. A wet-nurse named 'Aḳila was appointed. In reply to the Nawáb's letter, the Emperor sent the fish dignity, with a title and a dress of honour, for the child. Ahmad Khán having erected a *Gulálbár* at the 'Idgáh, the child was placed in a *pálki* and sent out to it in state to receive the Emperor's gifts. The dress was put on the child, and he was invested with the title of Muzaffar Jang. Salutes were fired, gold and silver were given away, the *naubat* was beaten, and with joyful demonstrations they returned slowly to the fort. When the child was four years, four months and four days old, he was taught the Bism-illah and sent to school. He was made over to a tutor *(atálik)*, and learned men were appointed to teach him. In a few years he finished his education, and then he began to be instructed by his father in state affairs.

First visit of Gházi-ud-din Khán 'Imád-ul-mulk.

During Ahmad Sháh Duráni's fifth expedition, in 1170 H. (26th Sept. 1756, 15th Sept. 1757), Gházi-ud-dín obtained his leave to raise a fine from the country between the Ganges and the Jamna. His object would appear to have been to force money from Shuja'-ud-daula, Nawáb Wazír of Audh. Accompanied by two princes of the Delhi house, Hidáyat Bakhsh, son of 'Alamgir II, and Mirzá Bábar, son of that Emperor's brother, 'Azuddín, and the Duráni troops under Ján Báz Khán, Gházi-ud-dín Khán proceeded to Farrukhábád. He had sent on his own troops under Mír Yahyá Khán, son of Zakariya Khán. Ahmad Khán came out to meet his visitors and presented appropriate presents. The army soon after crossed the Ganges and marched as far as the stream called the Garrah, on the boundary of the Audh territory. Shuja'-ud-daula, leaving Lakhnau, came out as far as Sándi and Páli, sixty-eight miles west of that city, in order to oppose the invaders. At length, by the good offices of Sa'dullah Khán Rohela, the matter was settled by a payment of five lakhs of rupees. On the 7th Shawál 1170 H. (25th June, 1757), Gházi-ud-dín Khán and the two princes re-entered Farrukhábád.

Meanwhile Ahmad Sháh Duráni had retreated rather suddenly from Mathura to Delhi; and there, on the recommendation of the Emperor, who complained of 'Imad-ul-Mulk, the Duráni king appointed Najíb Khán to be Amír-ul-Umrá, and left him in charge of the capital. 'Imad-ul-Mulk immediately retaliated by creating Ahmad Khán Amír-ul-Umrá, and by appointing him to the post of imperial Bakhshi.* Gházi-ud-dín Khán then

* It appears from the Táríkh-i-Muzaffari that this appointment was renewed by Sháh 'Alam. When, on the 5th Rajab 1175 H. (30th January, 1762), Shuja'-ud-daula was invested with the office of Wazír, Ahmad Khán was made fourth Bakhshi.

marched for Delhi, joined by some of Ahmad Khán's troops, and by the aid of the Mahrattas he speedily expelled Najíb Khán.

This visit must have laid the foundation for the friendship between Gházi-ud-dín Khán and Ahmad Khán, a friendship so strong that after his public life was over, the fallen Wazír found an asylum for at least nine years in Ahmad Khán's capital. We shall come to the details of his second visit further on.

Ahmad Khán at the battle of Pánipat.

When Ahmad Sháh Duráni entered India for the sixth time, in the year 1173 H. (25th Augt. 1759—13th Augt. 1760), Ahmad Khán went with the Rohela leaders to pay his respects to the invader. They were introduced to him at Koil on the 4th Zi'l Haj 1173, (18th July, 1760).* The defeat of Dátáji Sendhiá took place shortly afterwards.

Ahmad Khán must have made more than a nominal submission to Ahmad Sháh, for we find him forwarding supplies to the camp under a large convoy. Holkar, who had escaped from the defeat, was near Agra and, hearing of this convoy, crossed the Jamna. He took or destroyed a great part of the supplies and then retired again across the Jamna. A body of Afgháns were, however, detached from their main army and, overtaking him by a prodigious march, routed his troops with great slaughter.

Ahmad Sháh, after moving across the Jamna, took up his quarters at Anúpshahr. After some time Shuja'-ud-daula was induced to give in his adherence. The local chroniclers assert that this was effected through Háfiz Rahmat Khán and Ahmad Khán. Soon Sadasheo Bháo arrived from the Dakhin with an immense army, under Jankojí, son of Apá Ji Sendhiá, Ibráhím Khán Gárdi, Mulhár Ráo and others, in order to avenge the defeat of Dátáji. On the 25th October, 1760, Ahmad Sháh marched from Anúpshahr and crossed the Jamna about twenty miles above Delhi. Ahmad Khán Ghálib Jang was present with a contingent of five thousand men. The Mahrattas proceeded to entrench themselves at Pánipat, and Ahmad Sháh encamped opposite them. Daily skirmishing, varied by one or two partial engagements, went on for more than two months, till the Mahratta supplies failing entirely, they were forced to risk a general action.

The story goes that Ahmad Sháh Duráni offered a reward of one rupee for every Mahratta head. Ten thousand horsemen were sent out daily to plunder villages and cut off supplies. These men used to capture any lagging groom, grass-cutter or petty dealer they came across and, producing the captive's head before the king, they received a rupee for each head. Hearing of this, Nawáb Ahmad Khán said to his *arz-begi* (chamberlain),

* Life of Háfiz Rahmat Khán, p. 59.

Musharrif Khán, that he would give two rupees for each Mahratta brought in alive. The Duránis then began to bring in their prisoners alive. The Nawáb paid for each the sum of two rupees, and then at midnight he let them go free. On reaching the Bháo's camp, they were loud in their praises of Nawáb Ahmad Khán. Shuja'-ud-daula and Najíb Khán reported this matter to the Duráni king, and from that day he was displeased with the Nawáb.

In order to augment this displeasure those two nobles also remarked that Ahmad Khán, although Amír-ul-Umra and Bakhshi of the Empire, had brought a very insignificant force. The Sháh made no reply. But Sháh Wali Khán, his Wazír, and himself of the Bangash clan, who happened to be present, sent for Ahmad Khán. On his appearing, the Wazír rose to greet him and gave him a place by his side. Then turning to him, he said, "O "Ghálib Jang! you are one of the great nobles of Hindustan, yet you have "brought with you a very small force. What is the reason?" Now Ahmad Khán had already heard, through Jang Báz Khán Bangash, of the evil speeches of his enemies. In reply to Sháh Wali Khán, the Wazír, he said that he had left his *bakhshi* at Farrukhábád with a large force to guard his house; for Gobind Pandit had advanced from Bundelkhand with three thousand men and, having crossed the Jamna, was encamped on the banks of that river. If he had left no troops behind, his capital and his house would have been plundered. Further, with this same small army he had once defeated Safdar Jang and his immense force, including Suraj Mall, Rájah Himmat Singh and other Rájahs. If he had wished, he could have then marched on Delhi, but refrained out of respect for the presence of the Emperor. Sháh Wali Khán said he had already heard in Kábul reports of what was referred to. The Nawáb ended by saying that the quality of his army, though it was small, would be seen in the day of battle.

Opposed to Ahmad Khán's battery was that of Ibráhím Khán Gárdí* who commanded twelve thousand regular infantry. One dark night, this Ibráhím Khán gave orders that, as Ahmad Khán's battery was weaker than that of any other noble, he would at that point make a night attack. In the last watch of the night Ibráhím Khán's troops attempted to surprise the bat-

* *Gárdi* was the name given to the regular infantry disciplined after the European manner. (Grant Duff, p. 315.) The translator of the "Seir-Mutáqharín" (Calcutta, 1789, Vol. III, p. 152), says that Ibráhím Khán was a very thin black man, much pitted with the small-pox, who had in his early years been Chobdar to a French officer at Pondicherry. He rose in the French service to be a Commandant of their disciplined sepoys. He then went over with his men to the Mahrattas and took service with Sada Sheo Bháo.

tery. Ahmad Khán's guns were, however, all in order, and many had iron shields (? = *chadaren*). As it was the cold season, there were watch-fires here and there, at which the camp-followers and labourers were warming themselves. These men, hearing the tramp of horses' hoofs, called out to each other that the Mahrattas were on them. They snatched up some lighted wood from the night fires in pieces of broken pottery and threw them on the port holes of the guns and "*chádar*," which all went off together. A number of the enemy were slain and the rest fled. On Ahmad Khán's side not a soul was hurt. All this was done without the Nawáb being disturbed. At dawn the Durráni king visited the field of battle. Ahmad Khán went out to meet him, when he said that he had now seen, with his own eyes, proof of that bravery of which he had heard. He took off his *jigha** and made a present of it to the Nawáb. After that his enemies were abashed and silenced.

On the day of the great battle (7th January, 1761), Ahmad Khán was directed to guard the women, his force being so small. The Nawáb refused indignantly, saying, that such work was fit for eunuchs, he would fight in the front. The Abdáli king then sent him to the right wing. It was here that the first attack was made, and after a contest in which Ibráhim Khán Gárdi was wounded, the Mahratta gained the advantage. In this emergency Ahmad Khán sent his *darogha*, Musharrif Khán, to Ahmad Sháh asking for aid. When the messenger reached the king, Shuja'-ud-daula and Najíb Khán stated that the enemy was not opposed in great force to Nawáb Ahmad Khán, that the need for reinforcement was greater with 'Ináyat 'Ali Khán, son of Háfiz Rahmat Khán. When Musharrif Khán reported that no reply had been given by the king, he was sent back with a still more pressing message. At length two divisions were ordered out, and these having strengthened the right wing, the Mahrattas were gradually driven back. Biswás Ráo having been killed, Sadasheo Bhao fled, all became confusion, and by two o'clock in the day the field was won.

Dáim Khán, chela, used to relate that when Ahmad Khán was sent for after the battle to receive a *khilat*, he sat down by the entrance of the tent. Shuja'-ud-daula took up the Nawáb's sword and pulled it out of its scabbard. There was no edge on it, the Nawáb using it in a particular way. Shuja'-ud-daula in a mocking manner said—"Are you a commander of Fifty-two "thousand and own such a sword as this?" The Nawáb replied, "The "edge of this sword was felt by your father well." He referred to the defeat and flight of Safdar Jang. Nawáb Najíb Khán, Rohela, who was a great friend of Shuja'-ud-daula, then asked for the sword and, having looked at it, praised it ironically and begged it as a gift. Nawáb Ahmad Khán

* A gold ornament worn in the turban—"*Qanoon-e-Islam*," 2nd ed. App. III, p. x.

told him to take it. Najíb Khán said, "Steel should not be received for nothing;" so he sent for a *paisa* (copper coin) and, putting it on both hands, offered it with mock respect to Nawáb Ahmad Khán. The Nawáb taking it up said, "It is right and proper that you should offer me a *nazar*, for "you were once in my father's service." This was true, for Najíb Khán began life as a *Jama'dár* on five rupees a month under Muhammad Khán Ghazanfar Jang and then entered the service of the elder Ghází-ud-dín Khán on seven rupees a month. The first interview was accorded to Nawáb Ahmad Khán, and by special permission he was allowed to take in with him three persons to hold him up. They were Fakhr-u l-daula Bakhshi, Mihrbán Khán Diwán and Dáim Khán. Sháh Wali Khán, the Wazír, being of the same clan, had recommended Ahmad Khán, and in this way he obtained the first entry. When all the other *amírs* were admitted, the king gave Ahmad Khán the order to sit down.

Visitors to Farrukhábád.

During the latter part of Ahmad Khán's life, from 1759 to 1771, there were a number of distinguished visitors to Farrukhábád. Many of the Delhi nobles sought shelter there, on the breaking up of the imperial court and the occupation of the capital by the Mahrattas. When 'Abdullah Khán, son of 'Ali Muhamnad Khán, Rohela, attempted to assassinate Háfiz Rahmat Khán, it was to Farrukhábád that he fled, and it was through Ahmad Khán's intercession that he obtained pardon, and the parganah of Aujháni was granted for his subsistence.* And, owing to the grant of the parganahs of Shikohábád, Phaphond and Itáwah, made to the Rohelas by Ahmad Sháh on his departure from India, Háfiz Rahmat Khán in 1762 passed through Farrukhábád with his son, on his way to visit his new territory.† Again, after the battle of Baksar on Oct. 23rd, 1764, Shuja'-ud-daula came for a time to Farrukhábád. Ahmad Khán could at one time boast of having two ex-Wazírs of the Empire encamped at opposite gates of his city—'Imád-ul-Mulk at one and Shuja'-ud-daula at the other gate.

The most important group of visitors, however, was composed of Ghází-ud-dín Khán 'Imád-ul-Mulk, his relations and friends, who for many years found an asylum with, and lived upon the bounty of, Nawáb Ahmad Khán. Of each of these we proceed to give such details as are known.

1. *Ghází-ud-dín 'Imád-ul-Mulk.*

Mír Shaháb-ud-dín was the son of Mír Muhammad Sháh, entitled Ghází-ud-dín Khán Firúz Jang, eldest son of the celebrated Nizám-ul-Mulk Asaf Jáh. His mother was a daughter of the well known Wazír,

* Life of Háfiz Rahmat Khán, pp. 46, 47.

† Life of Háfiz Rahmat Khán, pp. 67, 77, 79.

Kamr-ud-dín Khán 'Itimád-ud-daula. 'Imád-ul-Mulk's career from 1752 to 1760* is sufficiently well known. From the date, however, when he ceased to play a prominent part, we are told nothing more of him than that he took refuge in one of Suraj Mall's fortresses. In one work we are told that he was found by Colonel Goddard at Surat in 1790;† and that, by order of the Supreme Government, he was sent off to Mecca, whence he never returned. How far this statement is correct will presently be shewn. The *Khizána 'Amira*, which was written in 1762-1763, naturally concludes 'Imád-ul-Mulk's story by leaving him hiding in the Bhartpur country. But there can be no doubt that his family and friends were sent to Farrukhábád, and that from at least the year 1762 he himself lived there constantly. The quarter of the city where he lived, near the Ḳádirí gate, is still known as the Cháoni or encampment of Ghází-ud-dín Khán. The income of Parganah Bilhor, said to amount to Rs. 12,000 a month, was allotted to him by Ahmad Khán during his stay in Farrukhábád.

In 1771, when Ahmad Khán died, and the Emperor Sháh 'Alam was approaching Farrukhábád, Ghází-ud-dín Khán, fearing vengeance for the murder of Alamgír II, the Emperor's father, thought it advisable to quit that city. He left his relations and servants there and started with a few faithful retainers. We do not know how the interval was passed, but the *Ma'asír-ul-Umrá* says, that in 1187 H. (March 1773—March 1774), he appeared in Málwá, where the Mahrattas gave him several mahals for his support. We learn from the *Táríkh-i-Muzaffari* that he was found by Colonel Goddard at Surat in February 1780. Thence he was despatched on a pilgrimage to Mecca. Returning by Basrah, he travelled to Kábul and Ḳandahár, where he visited the ruler, Taimur Sháh, son of Ahmad Sháh Durráni. At that time the prince Ahsan Bakht, son of the Emperor Sháh 'Alam, who, after the blinding of his father by Ghulám Ḳádir Khán (June 1788), had escaped from Delhi, and had wandered homeless through Rajputána, past Jainagar, Bikáner, and Multán, arrived at Taimur Sháh's court. Out of regard for him as a descendant of the great Taimur, as a relation of Sháh 'Alam, and as a guest, to whom the rights of hospitality were due, the king treated him with consideration. He sent some of his own troops to accompany the prince and 'Imád-ul-Mulk towards Multán, promising to march soon in person for the conquest of Hindústán. Shortly after this the king died‡ and was succeeded by his son, Zamán Sháh, who

* Elphinstone, 651—659.

† A mistake for 1780. See Wilson's Mill, VI, 37 note, from which the statement is taken.

‡ Taimur Sháh died on the 7th Shuwwál 1207 H. 18th August 1793. (*Táríkh-i-Ahmad* of 'Abd-ul-Karim.)

was detained at home by his own rebellious subjects. When Ahsan Bakht and 'Imád-ul-Mulk reached Sindh, the Kábul troops, hearing of the death of Taimur Sháh, returned to their home. 'Imád-ul-Mulk and Náṣir Khán Bilúch went to Baháwalpur. In time a quarrel arose between the prince and 'Imád-ul-Mulk, owing to many of the prince's companions being mean and base fellows. The prince remained in Multán, where he became afflicted with melancholy madness and passed the rest of his days there out of his senses. Meanwhile 'Imád-ul-Mulk found his way to 'Ali Bahádur Mahratta, son of Shamsher Bahádur, who had an army and some territory in Bundelkhand. From him he obtained a grant of fifty-two villages, which form the petty state, now known as Báoni, measuring about fifteen miles across each way. It lies about 12 miles east of Kálpi, in a bend of the river Jamna.* 'Imád-ul-Mulk died at Kálpi on the 10th Rabi II, 1215 H. (1st September 1800), when his age must have been about sixty-eight. According to the orders contained in his will he was buried at the shrine of Shekh Farid Shakkarganj atPákpaṭan.† His son, Nasír-ud-daula, was in possession when the British occupied Bundelkhand in 1803, and to him the grant was confirmed by the Governor-General's letter of the 24th December 1806. The further history of the family will be found in the *Gazetteer*, under the article *Báoni.*

By 'Umdah Begam, daughter of Mu'in-ul-Mulk, the son of Ḳamr-ud-dín Khán, who was Wazírfrom 1721 to 1749, he had one son called 'Ali Jáh ; and by Gunná Begam, daughter of 'Ali Ḳuli Khán, Daghistáni, poetically styled Wálih, he had one son, Nasír-ud-daula. By another wife he had a son, Ghulám Jaláni Khán, who died at Delhi from eating ice. The *Ma'asír-ul-Umra* tells us that he had a large family, and one of his sons finding his way to Haidarábád was, on account of his relationship to the reigning house, made a Panj Hazari, with the title of Ḥamíd-ud-daula and a money allowance.

Gunná Begam, 'Imád-ul-Mulk's wife, came to Farrukhábád with him. Herself a poet, she was the daughter of the poet, 'Ali Ḳuli Khán, known as Wálih. Her tomb is at Núrábád, sixty-three miles south of Agra and fifteen miles north of Gwaliyár. It bears the short inscription "Alas! Gunná Begam" 1187 H. (25th March, 1773—14th March, 1774.)‡

2. *Nawáb Khádim Hussain Khán.*

He had a house near that of Nawáb 'Azim Khán, and when he died he was buried in that house. He received a *jágir* of Rs. 15,000. After

* Gaz. N. W. P. I, 384 and Aitchison's Treaties III. 250, under the word Baoni.

† In the Panjab, ten miles west of the Rávi—Thornton, 757.

‡ Archæological Survey of India, Vol. II, 397.

the death of Siráj-ud-daula, Názim of Bengal, in June 1757, he had obtained a grant of the Purinaya Subah, on condition of recovering it at his own expense. He had been in the service of a former governor there, Sayyad Ahmad Khán. He was not really Mir Ja'far's nephew, as he claimed to be. He was the son of Sayyad Khádim 'Ali Khán by a Kashmiri wife, and his father afterwards married a sister of Mir Ja'far (Seir Mutaqherin, II. 9, 10, 11.)

3. *Nawáb Mír Jumla, 'Abídullah Khán, Sadr-us-Sadúr.*

He was the son of Mír Jumla Farrukhsiyarí, and brother of Sharíyatullah Khán. This latter, on the dismissal of 'Azím-ullah Khán, was promoted to be Sadr. He died on the 2nd Rajab, 1155 H. (24th August 1742), and on the 2nd Zi'l Ka'd, 1156 H. (7th December, 1743), 'Abídullah Khán, was appointed to the vacant office. On the arrival at Farrukhábád of this Nawáb, Wali-ullah saw him and praises his great learning. After the death of Nawáb Ahmad Khán, he left Farrukhábád and went to live at some place where he died. He received Rs. 500 a month.

4. *Nawáb Yahya Khán.*

He was the eldest son of Khán Bahádur Zakaríya Khán, the *Muhtasib* of Delhi. He turned *fakir* and was then styled Yahya Sháh. He was buried at Yahyaganj, a village near Shekhpur on the Cawnpur road or, as some say, in Kamálganj. Khwájah Dáud Khán was a son of Yahya Khán, by the daughter of 'Itimád-ud-daula Ḳamr-ud-dín Khán Wazír, and his mother, being the aunt of 'Imád-ul-Mulk, was known as the Khálá Begam. Dáud Khán died in Farrukhábád. Sháh Naváz Khán, the younger brother of Yahya Khán, died at Lahor. His son Mirzá Ján and his friend, Maulvi Rahím Yár Khán, Bukhári, came with the others to Farrukhábád, where they both remained till they died. Mír Mughal, a son of Rahím Yár Khán, became náib to Nawáb Muzaffar Jang, and was afterwards exiled.

5. *Nawáb Salím Khán.*

His house was behind the Tikona Thána in the city. It was afterwards inhabited by Faiz-ullah, a *Khawás* of Nawáb Muzaffar Jang, and his descendants in 1839 still lived there.

6. *Nawáb Bú 'Ali Khán.*

He had been Subahdár of Bengal. He was paternal uncle's son (cousin) to Nawáb 'Ali Jáh, *i. e.*, Kásim 'Ali Khán, Subahdár of Bengal. There is a *Katra* (or Bazar) Bú 'Ali Khán, probably named after him. He left Farrukhábád in 1771, on Ahmad Khán's death.

7. *Choṭe Sáhib.*

8. *Baṛe Sáhib.*

Baṛe Sáhib was Ḳamr-ud-dín Khán Wazír's sister and *Choṭe Sáhib* was his widow. They had a house in Nawáb 'Abd-ul-Majíd Khán's *garhi.* They received jointly Rs. 500 a month. Once a year Nawáb Ahmad Khán visited them, when they presented him with trays of jewels. Miyan La'l, guardian *(atálik)* to Muzaffar Jang was their eunuch (*khojá*). They both died in Farrukhábád, and their graves are behind Pandit Daya Rám's house, in Muhalla Cháoni, within the *bágh* of Shuja't Khán, *Khansámán* to Nawáb Ahmad Khán. The place is called the *Madrassa.* Miyan La'l is buried at their feet. Mír Bahádur 'Ali is careful to point out that their names never received the feminine termination in long *í.*

9. *Hakím Sayyad Imám-ud-dín Khán.*

Son of Sayyad Gharib-ullah, son of Sháh Ghulám Muhi-ud-dín, a native of Newatní,* Bángarmau Mohání. The Hakim lived in Mohalla Lohái and received Rs 500 a month.

10. *Hakím Shafáe Khán.*

They say that Ján 'Ali Khán, chela, who built the *masjíd* at the gate of the fort, had a great affection for this Hakím, with whom he exchanged turbans. When the Hakím went away to Delhi, Ján 'Ali Khán asked him for a prescription by which his strength would remain unimpaired. The Hakím answered, that the following was the essence *('aṭr)* of all his books. "At the morning meal, take one quarter seer of kid's flesh and "one chiták *ghi,* eat it cooked as you are used to; then in the evening pre- "pare washed *másh dál* and the same quantity of *ghi.*" Ján 'Ali Khán eat this food all his life, and his strength did not diminish.

11. *Nawáb Násir Khán.*

He had been Subahdár of Kábul at the time of Nádir Sháh's invasion (1151 H.=1739). He lived in Mohalla Kanḍhái, where Núroz 'Ali Khán, son of Sarfaráz Mahal, lived in 1839. His allowance was Rs. 3000 a month. He died in Farrukhábád and was buried in the Haiyát Bágh, near the tomb of Nawáb Muhammad Khán Ghazanfar Jang. He died before 1771.

They say that the eldest son of Nawáb Násir Khán was in the service of Shuja'-ud-daula and received a large sum monthly. One day Shuja'-ud-daula told him to send to Farrukhábád for his father, as he wished to appoint him his *náib.* Násir Khán refused the offer. He held the three thousand rupees he received from Ahmad Khán to be equal to three lakhs; for Ahmad Khán, when he went to visit him, rose to his feet to receive him. But if he became *náib* to Shuja'-ud-daula, some day when he rode up to his gateway, the

* A small town, two miles south-west of Mohán in the Unáo district.—Oudh Gaz. III. 16, II. 500, and I. 224.

menials would tell him that the Nawáb Sáhib was taking his rest, and he must therefore wait. Then from that day, though alive, he knew he would wish himself dead. Unable to persuade him, his son went back to Faizábád.

By another wife, Násir Khán had two sons (1) Ya'ḳút Khán, (2) Muhib 'Ali Khán. The first lived up to the time of Shaukat Jang (1813—1823), and he always read aloud in the *Imámbára.* Muhib 'Ali Khán's son was in 1839 a messenger in the employ of Kannú Lál, merchant. Such is God's will, nor can any dependence be placed upon fortune—the grandson of an Imperial Governor had become the servant of a Baniya on a few rupees a month.

12. *Háji 'Abdullah Khán.*

He lived opposite the house of Mir Roshan 'Ali, an employé of Muzaffar Jang's.

13. *Mirzá Aslam Beg "Háthi nashín" of Delhi.*

He lived close to Háji 'Abdullah Khán (No. 12) and he received five hundred rupees a month. His son, Mirza Khair-ullah Beg, was a poet and a man of parts. On his father's death, he became a *fakir*, when he passed by the name of Kamtar Sháh. His poetical name was *Kamtar.* He it was who always read aloud in Nawáb Amín-ud-daula's *Imámbára ;* he lived at the gate of that Nawáb's old fort. He died in 1240 H. (26th August, 1824—16th August, 1825.)

14. *Nawáb Haidar Ḳuli Khán.*

Formerly Mir Atash or Commandant of Ordnance and Subahdár of Gujrát. He lived in a line with the house of Mír Roshan 'Ali: his allowance was Rs. 500 a month. His grandson, Mirza Zahíne, a disciple of Maulvi Wali-ullah, was alive till Nawáb Shaukat Jang's time (1813—1823), and his (Mirza Zahíne's) sons, Mirza Sádiḳ and Mirza Ja'far, were in 1839 among the Nawáb Rais' sowárs. The grandmother of Mirza Zahíne, Gumáni Begam, got old Ameṭhi, on the river, between the city and Fathgarh, from Nawáb Muzaffar Jang as *nánkár*, with the land occupied by the fort of Zu'lfiḳárgarh, since resumed by the English. Ahmadi Begam, granddaughter of Haidar Ḳuli Khán, was still living in 1839 in the *Chíní Wálá* ward, with her sons, Mirzá Haidar and Mirzá Muhammad.

15. *Nawáb Ja'far Ḳuli Khán.*

Own brother to Haidar Kuli Khán (No. 14). He died and was buried at Farrukhábád.

16. *Rájah Jugal Kishor.*

A Bhát by caste. He is said to have spent a fabulous sum at Delhi upon the marriage of his son, the earthen *huqqa* stands *(guṛguṛi)* costing

many thousands of rupees. He was the agent at Delhi of Mahábat Jang, Subahdár of Bengal. We have already seen him employed by Safdar Jang to carry out the resumption of the Farrukhábád territory after the death of Ḳáim Khán.

Once Nawáb Ahmad Khán, Gházi-ud-dín Khán Wazír, and Rájah Jugal Kishor were returning to Farrukhábád from a visit to Makhanpur.* Their three elephants were moving in one line. In the plain of Nanauwah, on the road from Yáḳútganj to the city, close to where the central jail now stands, the Rájah got down for a necessary purpose, when the elephant ran at him and killed him. All his servants set up weeping and wailing; while Nawáb Ahmad confiscated the whole of the property to his own use. In this affair, Nawáb Ahmad Khán and Gházi-ud-dín had given the hint to the Rájah's *Mahaut*, Jugal Kishor having one day been wanting in proper respect to those two nobles. No doubt Ahmad Khán also bore him a grudge for the part he had played in Safdar Jang's time. Jugal Kishor's grandson, Shítábú, was still alive in 1839, his house was in Mohalla Núnhai, and at the Holi festival, in the drama *(swáng)* of the Jogís, he used to dress as a female mendicant and dance.

17. *Nawáb Jalál-ud-daula, called Mír Sulaimán.*

His house was in Mohalla Nitganja. He was a great favourite of 'Imád-ul-Mulk, and they attribute to his bad advice the blinding of Ahmad Sháh, and the murders of 'Alamgir II, Intizám-ud-daula Khán-khanán, and 'Aḳabat Mahmúd Khán. He received Rs. 400 a month, and left Farrukhábád with his patron.

18. *Nawáb Ra'áyat Khán.*

He was the son of Zahír-ud-daula 'Azímullah Khán (Subahdár of Málwa, and afterwards Sadr), son of Ra'áyat Khán, younger brother of Muhammad Amín Khán. Ra'áyat Khán's mother was Núr-un-nissa Begam, sister of 'Itimád-ud-daula Ḳamr-ud-dín Khán. Ra'áyat Khán married a cousin, the daughter of Kamr-ud-dín Khán. He left Farrukhábád upon the death of Ahmad Khán in 1771. The *Táríkh-i-Muzaffari* also mentions a brother, Ḳuṭbe Khán, as being at Farrukhábád (year 1176).

19. *Mír Fakhr-ud-dín Khán.*

Commonly known as Nawáb Sháh Jiú. He was the son of 'Itimád-ud-daula Ḳamr-ud-dín Khán, Wazír, and husband of the daughter of Muzaffar Khán, brother of Ṣamṣám-ud-daula, Khán Daurán Khán. He received Rs. 1000 a month, and on the death of Ahmad Khán he returned to Delhi, where he died.

* In Parganah Bilhor of the Cawnpúr district.

20. *Nawáb Aḥmad 'Ali Khán.*

He was sister's son of Sayyad Sádát Khán Farrukhsiyari, who after the death of Asaf Jáh was for a short time Amír-ul-Umrá, with the title of Zu'lfikár Jang, his nephew being made Bakhshi of the Aḥadís. Ahmad 'Ali Khán lived in Mohalla Ismá'ilganj in the house known as the Rájah's. His allowance was Rs. 300 a month; he died at Farrukhábád.

21. *Nawáb 'Abd-ul-Báḳi Khán.*

Son of Ḥamíd-ud-dín, Namícha, 'Alamgírí. He lived in Mohalla Nitganja in a hired house. He was very friendly to Sayyad Ahmad 'Ali (father of Muftí Wali-ullah) and kind to Wali-ullah himself. When Sháh 'Alam returned to Delhi, the Nawáb followed him and died there. His sons were friends of Wali-ullah, being of the same age. One, Mirzá Mughal, was a poet.

22. *Nawáb Daráb Khán.*

Son of Tarbíyat Khán, a noble of Muhammad Sháh's time (1718—1749). He died and was buried at Farrukhábád.

23. *Sayyad Ḥashmat 'Ali Khán.*

In the reign of Muhammad Sháh (1718—1749) he was the agent at the Delhi Court for Nawáb Áṣaf Jáh Nizám-ul-Mulk. Wali-ullah visited him several times. He was turned out of Farrukhábád in the days of Bakhshi Fakhr-ud-daula (1771—1773).

24. *Manavvar Khán.*

The younger brother of Nawáb Roshan-ud-daula Bahadur Sarwar (?). The *Táríkh-i Muzaffari* also names a son of the latter, Anwar Khán, as present at Farrukhábád (year 1176).

25. *Ghiyás-ud-dín Khán.*

He was the son of Saíd-ud-dín Khán, Mír Atash in the reign of Muhammad Sháh.

26. *Bahádur Khán.*

Son of Nawáb A'zim Khán.

27. *Ghulám Hussain Khán.*

His name is given in the *Táríkh-i-Muzaffari*. He was the grandson of Mu'in-ud-daula Dildaler Khán Naṣír Jang, son of Mír Yahya Khán Munshi (?).

28. *Hakím Shekh Muhammad Fakhr-ud-dín 'Abbási.*

He had been *darogha* of the household (*itbá'-khána*) to Kamr-ud-dín Khán, Wazír. He got Rs. 150 a month.

29. *Hakím Ruḥ 'Ali Khán.*

30. *Hakím Muhammad 'Ali Khán.*

At this period many other jagirdárs, pensioners and dancing women from Delhi took refuge in Farrukhábád. The wakils of the following rulers also attended there upon Ghází-ud-dín Khán 'Imád-ul-Mulk, *viz.*, those of the Rájah of Jainagar, the Rájah of Narwar, the Raṭhaur Rájah, Rájah of Jodhpur, the Ját Rájah (Súraj Mall) of Díg and Kumer,* Rájah Chatarpat of Gohad, the Rájahs of Bundelkhand, *i. e.*, of Pannah, Orchha, Datiya, Seonḍha and Chanderi, the Rájah of Koṭah-Bondi, of Sháhábád-Kurokí, of Bhadáwar-Jagammanpúr and others.†

Shuja'ud-daula and Sháh 'Alam attempt to attack Farrukhábád.‡

When Sháh 'Alam returned from his unsuccessful campaign against Bengal, Shuja'-ud-daula moved out to meet him as far as Saráe Rájá, near the Karannasa, in the Benares district, and conducted him thence to Jájmau, by way of Jhúsi and Allahábád. After the rains, in Rabi 1175 H. (October 1761), the Emperor moved to Kálpi and thence to Jhánsi. On their return to Allahábád, some time in the year 1176 H. (23rd July, 1762—12th July, 1763), Shuja'-ud-daula persuaded the Emperor to join him in a campaign against Ahmad Khán of Farrukhábád.

Three reasons are assigned for this attack on Nawáb Ahmad Khán. The first, which was no doubt used to influence the Emperor, was as follows. The news-writer sent letters to Shuja'-ud-daula, informing him of Ahmad Khán's daily life and stating that he rode in a *pálki*, that he caused elephants to fight, that he had established a *Gulál bári* or royal pavilion, and had assumed other privileges of royalty. Shuja'-ud-daula writhed like a snake when he read this, and at once he made a minute report to the Emperor, adding that to mount the throne was the only step, which now remained for Ahmad Khán to take. The Emperor, being incensed at Ahmad Khán's supposed presumption, readily agreed to join in the campaign.

A second reason, and probably a better-founded one, is said to have been a quarrel over the occupation of the territory evacuated by the Mah-

* Both in Bhartpur territory, the former 20 and the latter 10 miles north of Bhártpur.

† This list is taken from Sháh Hisám-ud-dín's book.

‡ Wali-ullah p. 44, *Lauh-i-Tárikh*, Hisám-ud-dín, 353, *Tárikh-i-Muzaffari*, 1176 H. *Amád-us-Sa'dat*, pp. 88-90, Life of Háfiz Rahmat Khán, p. 78.

rattas, after the great defeat at Panipat in January 1761. The Mahrattas withdrew from the Duáb, and Ahmad Khán took possession of all the parganahs ever held by his family, and perhaps of some to which he had no claim. On the other hand, Shuja'-ud-daula wished to maintain him within the limits fixed by the treaty of 1752 and asserted his own right to all the recovered territory.

Another motive, which acted strongly on Shuja'-ud-daula, was the shelter given to Umráo Gir Gusáin. Umráo Gir had fled from Lakhnau with Hatya, a favourite dancing girl of the Nawáb's, and came to Farrukhábád with his twelve thousand fighting Nágás.* He encamped in a *bágh* near the city, and was introduced through Fakhr-ud-daula, Bakhshi. The Nawáb determined to retain the Gusáin in his service, although his advisers tried to deter him, pointing out that the Gusáin's contingent was too powerful, nor had they money to pay him. Ahmad Khán said he could not turn away a supplicant, a thing he had never done. Umráo Gir was sent to Kásganj to Roshan Khán, chela, (known as Miyan Sáhib), then 'Amil of the eight and a half maháls.

Himmat Bahádur wrote to his brother, remonstrating with him for leaving the master who had brought them up and joining a ruler whose

* Anúp Gir Himmat Bahádur and his younger brother, Umráo Gir, were chelas of the Rájah Indar Gir (or Gaj Indar Gir) whom we met before at the siege of Allahábád (p. 79) and elsewhere. The original abode of this Gusáin was in the jungle near Moth, in Bundelkhand, thirty-two miles from Jhansi. About 1744-5 he acquired many villages in that Parganah (*Gaz.* I. 550). In 1750 he entered Safdar Jang's service, and in 1752 he was killed near Delhi. Himmat Bahadur (Anúp Gir) died in 1804 at the age of seventy, when Narindar Gir, his son by Fakhr-un-Nissa Begam of Lakhnau, was still a minor. By article 3 of the Agreement, dated the 4th September, 1803, made with Himmat Bahádur, it appears that Rájah Umráo Gir, his brother, was then in confinement at Lakhnau, on account of a conspiracy against the Nawáb Wazír's government.—Aitchison, II, 225, ed. 1876. By a grant, dated the 1st March, 1806, the assignments in Bundelkhand were exchanged for a territory in the Cawnpur district, named Rasdhán, about forty-three miles south-west of Cawnpur city, in Parganah Sikandrah, which lies in the south-west corner of the district between the Jamna and the Sengar. This estate yielded a revenue of Rs. 1,357,000 a year. The families of Umráo Gir and Kanchan Gir also received pensions (*Gaz.* I. 41.) On Narindar Gir's death in 1840, the estate was sequestrated in payment of debts by order of the 12th May, 1841. The debts had barely been cleared off when the mutiny of 1857 broke out. Jai Indar Gir (son by Lálan Begam) and Padam Indar Gir (son by Rúba Begam) became rebels, and two-thirds of the parganah was confiscated. The two brothers were given an allowance of Rs. 100 a month. Jai Indar Gir died in June or July 1876; the other brother survives. One-third of the income, amounting to Rs. 28,780 a year, is paid to the widow of Narindar Gir, known as the Ráj Rani, who for the last thirty years has lived in the city of Cawnpur.

income was not sufficient to provide for the pay of his force. Umráo Gir replied that, to vex Shuja'-ud-daula, he intended to stay a few months, and if by his aid the Nawáb obtained nothing, he should not ask for pay. Himmat Bahádur showed the letter to Shuja't 'Ali Khán, chela, known as Miyan 'Ise, and he told Shuja'-ud-daula. The latter wrote an angry letter to Ahmad Khán, ordering him to turn out his "thief" at once. Ahmad Khán in reply dared Shuja'-ud-daula to do his worst; he had not sent for Umráo Gir, who had come of his own accord; and never yet had he turned out any refugee. Shuja'-ud-daula brooded over this answer, and for some months nothing more was heard of the matter. Meanwhile Nawáb Ahmad Khán's chief men urged Umráo Gir to go away, for if anything happened, all the world would say that he had been the ruin of the Bangash family. Umráo Gir listened to them and prepared to go away. Ahmad Khán declared that not a hundred Shuja'-ud-daulas should drag him away did he wish to remain; at the same time, if he desired to go, his feet were not chained. Umráo Gir started in the direction of Agra, but had gone no more than one stage when he was recalled, Shuja'-ud-daula's approach having been reported to the Nawáb.

Shuja'-ud-daula had heard that at Farrukhábád there was only a small force of four or five thousand men, the remainder being scattered about in the parganahs. He therefore gave out that he was marching on a *mulk-gíri*, or expedition to recover revenue from refractory zamindars. Part of the army advanced up the Duáb, plundering on its way the town of Musenagar on the Jumna. Head quarters were for a time at the Saráe of Khwája Pul.* On his side, Shuja'-ud-daula left Faizábád and proceeded leisurely through his own dominions till he reached the ferry of Nánámau in parganah Bilhor. The army crossed over and proceeded to Kanauj, while Shuja'-ud-daula and the Emperor took up their quarters at a bungalow and *bágh* in Makanpur, called the Madár-bári, belonging to Ahmad Khán. The villages in the neighbourhood of both Kanauj and Makanpur were given up to plunder.

The news writers had kept Nawáb Ahmad Khan under the impression that this army had set out for "*Mulk-gíri*." It was not till Shuja'-ud-daula arrived at Makanpur and began to ask how long it took to reach Farrukhábád, that its destination was disclosed. Rájah Gangá Singh of Chachendí,† a great friend of Nawáb Ahmad Khán, then with Shuja'-ud-daula, determined to send a letter of warning. He disguised his messenger as a *fakir* and hid the note in the man's shoe. His orders were

* In Parganah Sikandrah, some fourteen miles south-west of Jhinjhak railway station.

† See p. 377, Vol. XLVII, 1878.

to deliver it to the Nawáb, in whatever place or in whatever condition he might find him. The messenger started off secretly, and it was past midnight when, reaching the gateway of Ahmad Khán's house, he reported himself to Musharraf Khán, *darogha* of the gateway. At the time the Nawáb, having eaten his dinner, had gone to bed. No one dared to wake him. At length Miyán Sáhib Ján 'Ali Khán went in, and pressing the Nawáb's feet, delivered the note to him. One hundred rupees were given to the messenger.

The Bakhshis were sent for in hot haste. They reported that very few troops were at hand. The Nawáb told them to send for all the clerks, and ordered *parwánahs* to be written to all the 'Amils and Faujdárs, calling on them to start at once for Farrukhábád. At that time Bakhshi Fakhr-ud-daula with a large force was fighting Datṭa, zamindár of Aksauli, west of Márahra. The village lies in Parganah Sikandrah Ráo of the Aligarh district, and in those days the jungle was so dense that falcons (*báshá*) are said to have been caught there, and for years together no human being passed through it. In a few days after receiving the *parwánah*, the Bakhshi reached Farrukhábád with this army. Help was also called for from Mau, Shamsábád, Aṭa'ipur, Tilhar, Sháhjáhánpur, Barelí, Budáun, Anwalah, Bisoli and Aujháni.*

At this time Háfiz Rahmat Khán was encamped near his own frontier in Parganah Mihrábád, now in the Sháhjáhánpur district. The Nawáb sent to him Bakhshi Fakhr-ud-daula to ask his aid to save the Afgháns from disgrace. Háfiz Rahmat Khán, being no doubt afraid that, if Ahmad Khán were crushed, his own interests in the Duáb, where he then held Etáwah, Shikohábád and Phaphond, would be seriously endangered, seems to have shown great readiness to espouse the Nawáb's cause. He said he had already heard of the affair, and on that account had encamped near his frontier; he was quite ready to join, but his troops were in want of pay. If money were advanced, he would send for Sa'dullah Khán, Donde Khán, Mullá Sardár Khán, Fath Khán and others. Even if money were not forthcoming, he would not fail to attend with his own men. After he had made a report of this interview, the Bakhshi was sent back with two lakhs of rupees to be made over to Háfiz Rahmat Khán for expenses, and a promise of further advances when Nawáb Sa'dullah Khán joined. On receipt of this money Háfiz Rahmat Khán wrote to Sa'dullah Khán and the other chiefs, calling on them to march without a moment's delay. He also wrote to Shekh Kabír, his deputy at Etáwah, instructing him to march with his whole force direct to the Káli-naddi and encamp below Khudáganj. The Bakhshi returned and reported what had been done.

* Bisoli lies 24 miles N. W. of Budaon and Aujháni 8 miles S. W. of the same place.

After this the Nawáb wrote a letter (*kharita*) to Ghází-ud-dín Khán 'Imád-ul-Mulk, Wazír, who was then in the country of Súraj Mall Jaṭ,* asking for his aid and presence. The despatch was made over to Khwája Khán, the *wakil* of 'Imád-ul-Mulk, to whom the Nawáb said that if, which God forbid, he came across Súraj Mall, and he should ask why he, too, was not invited, the answer should be given, that formerly he had not behaved like a neighbour, else he never would have joined Safdar Jang. He had better march to join Shuja'-ud-daula, Safdar Jang's son, for with God's favour he, Ahmad Khán, did not want his aid; and, please God, he would serve Shuja'-ud-daula as he had served Safdar Jang.

When Khwája Khán reached Díg and delivered his letter, 'Imád-ul-Mulk at once sent for Súraj Mall. 'Imád-ul-Mulk repeated to him how affairs stood and declared it to be his intention to march to the assistance of Ahmad Khán. The Rájah asked why he had not been invited to join. Khwája Khán then repeated the Nawáb's exact words. The Rájah admitted that what the Nawáb said was true, still byegones should be byegones. Although he had not been asked, he would send off 3000 active horsemen with orders to encamp at Koil. If Shuja'-ud-daula advanced any further than Kanauj, they would advance by forced marches to join Ahmad Khán. Besides this he would send several thousand horse to accompany the Ex-wazír. They marched, and when 'Imád-ul-Mulk drew near the city, Ahmad Khán came out in person to meet him, and conducted him to his tents in the Haiyát Bágh.

In answer to the *parwánahs* the troops from far and near began to pour into the city. Altogether some thirty or forty thousand men had assembled, including Paṭháns from Sháhjáhánpur, Sháhábád and other places. When Háfiz Rahmat Khán arrived from Bareli, his tents were pitched in the fort of Fathgaṛh. Below Zu'lfiḳárgaṛh, near the city, a bridge of boats was thrown across, and there Mullá Sardar Khán and Donde Khán crossed with their men. The artillery was got out and put in order. It was then sent on to the banks of the Bagár just beyond Yáḳútganj, where all the tents were set up which had been plundered from Safdar Jang and Naval Ráe. The Nawáb then marched out at the head of his army, and having stayed one night, he returned to the fort, leaving the Bakhshi in command. Roshan Khán and Umráo Gir, each with about five thousand men, were ordered to proceed and join Shekh Kabír's camp on the Káli below Khudáganj.

Soon after Shuja'-ud-daula's arrival at Makanpur, an eunuch of his establishment made his appearance at Farrukhábád, and put up at the Lál

* It was not till 1763-4 that Suraj Mall lost his life during a skirmish with Najíb Khán's troops.

Saráe. He came to demand a return of the territory recently absorbed by Ahmad Khán. The Nawáb, having collected four or five thousand of his troops and all the Delhi refugees, such as Násir Khán, Ex-Subahdar of Kábul and others, sent for the eunuch. The envoy delivered a *farmán* from the Emperor, which was made over to Mihrban Khán, by whom it was read aloud. The Nawáb sent back an angry message to Shuja'-ud-daula. The next envoy sent was Sálár Jang, the Wazír's brother-in-law. The Rohelas were supposed to be secretly favourable to Shuja'-ud-daula; but instead of listening to Sálár Jang's message, they detained him as their prisoner.

'Imád-ul-Mulk now urged an advance towards the enemy, but Ahmad Khán objected to make the first advance. The Emperor being with Shuja'-ud-daula, people would call him a rebel and untrue to his salt, if he attacked first. He therefore proposed to write a remonstrance to the Emperor; they would see what answer they got, and they could act accordingly. The letter stated that the Nawáb, a hereditary servant of the state, was pursued by the unjust enmity of Shuja'-ud-daula. He ought to be called on to prove his accusations of using a *Gulálbári*, making elephants fight, and riding in a *palki* without leave. If mad elephants break their chains and rush off into the jungle to fight, no one is to blame. As to the royal pavilion, that is a mistake, only a few pieces of wood had been put up; for the Paṭháns having no manners, it was necessary to range them in rows along this barrier, and there force them to make their morning bow. The *palki* had been presented by his late Majesty, Alamgir II, when he made Ahmad Khán Bakhshi of the realm. Shuja'ud-daula was also angry, because Ahmad Sháh Durráni had deputed Ahmad Khán with Jahán Khán to bring that noble to his presence. Shuja'-ud-daula came with reluctance, and nourished an ill-feeling against the persons who forced him to attend. Najíb Khán, too, who was once in Ahmad Khán's employ, now had risen so high as to claim equality, which being denied him, caused hidden enmity in his mind. The letter then went on to recount at length the intrigues before the battle of Panipat, intended to exclude Ahmad Khán from the good favour of the Durráni ruler. It concluded by an appeal to His Majesty's sense of justice and requested that His Majesty would withdraw to some height, while the rivals fought out the matter. The victor could then present himself to do homage to his sovereign.

Mahtáb Khán Bangash, who was very clever and had not his equal for a negociation, received charge of the above petition. One hundred men were told off as his escort. The Nawáb's last instructions were that, if waiting two or three days would produce an answer, he should wait; if not, he was to come away without any formal dismissal. Mahtáb Khán on reach-

ing his destination was admitted to an audience. The secretaries read out the petition in a loud voice word by word. After hearing it the Emperor dismissed Mahtáb Khán and sent for Shuja'-ud-daula. In the Wazír's opinion no answer should be sent; no answer was the best answer. Mahtáb Khán waited two days, and when he found out that no answer would be given, he left without permission and returned to Farrukhábád, where he made a report to the Nawáb.

Next day Ahmad Khán and 'Imád-ul-Mulk had a consultation. 'Imád-ul-Mulk urged the Nawáb to march without any further delay. Just at this time, word came that Najíb Khán had arrived at Nabiganj, a small town between Bewar and Chibramau, some eighteen miles south of Farrukhábád. Najíb Khán Yusufzai, who had from various causes been detained at Delhi, had come by forced marches down the Duab *viâ* Sakít, destroying crops and burning villages as he advanced. He was a turban-brother *(paggri-badal-bhái)* of Shuja'-ud-daula's. Ahmad Khán sent two hundred and fifty trays of food by one hundred and twenty-five *kahars*, in charge of Sháh Muhammad Khán Jamadár, and Gulsher Khán "*sonṭhi-wálá.*" These men had orders to deliver an ironical message that the food was for Najíb Khán's own use, while the territory was there for his army's consumption; what he had done was quite right and lawful, for between brothers there need be no ceremony. Najíb Khán in anger ordered them to remove the trays, they might read the *Fátiha* of his father over them. It is said that six thousand Paṭhán horsemen left Najíb Khán's service at Nabiganj. They were received with open arms by Ahmad Khán, dresses of honour were distributed and daily rations were served out to them.

Next day Najíb Khán marched, and encamped near the Káli-nadi at Khudáganj, about half a *kos* from the camp of Shekh Kabír, Rájah Umráo Gir Atít, and Roshan Khán. Najíb Khán sent word to Shekh Kabír that he wished to pay him a visit. Shekh Kabír replied that they could only meet sword in hand; having come to aid Shuja'-ud-daula, how could he think of asking for an interview with them. The next day, without paying his visit, Najíb Khán marched off and entered Kanauj.

Najíb Khán was conducted by Shuja'-ud-daula to the Emperor's presence. They then began to discuss their plans. Najíb Khán assured the Wazír of his regret for the delay, which had allowed Ahmad Khán time to assemble troops. If war were decided on, he would be the first in the field, yet he doubted if his Afgháns would fight heartily against the Rohelas. He proposed to negociate. After two or three days Najíb Khán put his troops in motion towards Farrukhábád. Hearing this, Shekh Kabír sent him a message not to come further, as next day it was his intention to provide him with some entertainment. Najíb Khán sent back word that he had

not come to fight, he had come to seek an interview with Háfiz Rahmat Khán. Shekh Kabír told him in that case he might pass, but without his troops.

Najíb Khán, leaving his army, advanced with a few men, and crossing the Káli-nadi pitched his tents. Next morning he continued his march. As he got near the camp of Fakhr-ud-daula, he found the Bakhshi on his elephant, at the head of his whole army drawn up in battle array. Najíb Khán passed them in review and saw that they were very numerous. There were more leaders on elephants with Fakhr-ud-daula than there were with Najíb Khán. Najíb Khán proffered a *salam*, but no one returned it.

Passing on, Najíb Khán crossed the Ganges by the bridge of boats and waited upon Sa'dullah Khán, Háfiz Rahmat Khán, Donde Khán, Mullá Sardár Khán, and Fath Khán. Donde Khán, his father-in-law, taunted him for siding with Shuja'-ud-daula against a Paṭhán, but he defended himself by pleading gratitude for the timely aid afforded him, when invested by the Mahrattas in Sukartál. The night was passed in consultation. It appears that the Rohelas were offered one-third of the Bangash territory if they would withdraw, but Háfiz Rahmat Khán refused to forsake his friend Ahmad Khán.* The final decision was that peace should be made between Shuja'-ud-daula and Ahmad Khán. Háfiz Rahmat Khán engaged to go in the morning to see Ahmad Khán. When he was introduced to the Nawáb's presence, he congratulated him on the good news. The Nawáb asked what he meant. Háfiz Rahmat Khán replied, that by God's favour, they had gained a victory without fighting; Shuja'-ud-daula, becoming frightened by the preparations, had sent Najíb Khán to make overtures to Sa'dullah Khán. Ahmad Khán said he himself would accept what they agreed to, but Ghází-ud-dín Khán 'Imád-ul-Mulk must be consulted. They went together to that noble's quarters. He was of opinion that Shuja'-ud-daula and Najíb Khán, in despair of success, had made these proposals; although thus forced to make peace, they would not fail, when opportunity offered, to break their word. Háfiz Rahmat Khán admitted this was quite true, still when affairs took that turn, punishment would await them then as now. In the traditions of the Prophet was it not written that Peace is blessed. 'Imád-ul-Mulk answered, that if they were of that opinion, his decision must follow theirs. Peace was thus decided on.

Háfiz Rahmat Khán reported to Najíb Khán what had been said and done. The Emperor's presence was their only reason for accepting peace, and he requested that Najíb Khán would urge the Wazír to quit the Paṭhán territory at once. Najíb Khán proposed that they should go together and persuade Shuja'-ud-daula to retire. Háfiz Rahmat Khán objected that he

* Life of Háfiz Rahmat Khán, p. 78.

was in the service of Ahmad Khán, without whose leave he could not go. Najíb Khán told him that he should not have accepted such a lowly position. Háfiz Rahmat Khán informed him that there were others, for Sa'dullah Khán and his whole army had been subsidized, their expenses had been paid from the Nawáb's treasury, to that date seven lakhs of rupees had been advanced. He promised to go next day and ask the Nawáb for permission. The next day, Ahmad Khán having made no objection, Háfiz Rahmat Khán and Najíb Khán commenced their march. When they reached Khudáganj, Shekh Kabír was asked to accompany them. They paid their respects to the Emperor, and then went to Shuja'-ud-daula. They told him he ought to return to the east again. At length the Emperor and Shuja'-ud-daula set out eastwards. When they arrived at Koṛah, Najíb Khán and Háfiz Rahmat Khán took their leave. Najíb Khán followed the route to Delhi, while Háfiz Rahmat Khán returned to his own camp. Next morning, Nawáb Sa'dullah Khán and the other Rohelas came to take leave of Nawáb Ahmad Khán. He distributed gifts and dismissed them. The Sháhjáhánpur leaders also, 'Abd-ullah Khán and others, were given leave to go, after gifts and dresses of honour had been conferred on them.

Shuja'-ud-daula takes refuge at Farrukhábád.

After his defeat at Baksar on the 23rd October, 1764, Shuja'-ud-daula first sought aid from the Rohelas at Bareli, and for safety removed his women and jewels to that place. As the Rohelas declined to enlist on his side against the English, the Wazír and Háfiz Rahmat Khán came to Ahmad Khán at Farrukhábád. Not succeeding in inducing any of the Paṭháns to join him, Shuja'-ud-daula marched eastwards, only to be again defeated in May, 1765, at Koṛah-Jahánábád. Having again fled to Farrukhábád, he was persuaded by Ahmad Khán and Háfiz Rahmat Khán to come to terms, the result being the treaty signed at Allahábád in August, 1765.* A long speech by Ahmad Khán, dissuading from hostility to the English, will be found set forth in the "*Siyar-ul-Mutákharín.*"†

A few anecdotes connected with Shuja'-ud-daula's visit have been handed down. The encampment was at Haiyát Bágh, and then at Fathgaṛh. One day the Paṭháns suggested that the *Iráni* (Shuja'-ud-daula) should be murdered, since his father, Safdar Jang, had murdered five of the Nawáb's brothers. The Nawáb is said to have replied that treachery was not the habit of his family; by God's grace, he killed his enemies, if at all, in the open field.

* Aitchison's Treaties, Vol. II, p. 76.

† Edition, 1789, Vol. II, p. 367.

An interview was arranged, and Mír Akbar 'Ali, teacher of Nawáb Sa'dat 'Ali Khán, told the author of the "*Lauh*," that he went in the retinue of Nawáb Shuja'-ud-daula, being then twenty years of age. Ahmad Khán sent for arms from his armoury, which were much praised. Then trays of jewels were sent for. A pearl necklace, once worn by Ḳáim Jang, was much admired. Ahmad Khán put it round the Wazír's neck, when Shuja'-ud-daula became yellow with anger. He took the necklace off and for a long time held it in his hand and turned each pearl round with his fingers. Then putting it down on the cushion, he stood up and said, he wished to take his leave. The Nawáb and 'Imád-ul-Mulk stood up, and Shuja'-ud-daula then went off to Fathgaṛh. There he told his courtiers that Ahmad Khán had gone the length (*zayádati*) of investing him with the "*khila't*" of a pearl necklace.

Next day, Ahmad Khán returned the visit, and the two nobles sat down together, Dáim Khán, chela, being in Ahmad Khán's lap. Shuja'-ud-daula sent for water to drink, when Dáim Khán said "I too will drink." In those days it was the duty of Miyan Almás Khwája Saráe* to bring water for drinking. He took up a jewelled water bottle (*surái*) and cup, and the Wazír ordered him to give first a drink to the young Nawáb. Then Shuja'-ud-daula himself drank. From that day Almás 'Ali Khán had a great respect for Dáim Khán and obtained for him from Asaf-ud-daula (1775—1798) the *jagir* of Pukhráyán, in parganah Sháhpur-Akbarpur of the Cawnpur district.

Muzaffar Jang's marriage.

When the Nawáb determined to find a bride for his son, Muzaffar Jang, he sent for and consulted Kábila Khánum, one of the women of Ghazanfar Jang's time. He asked her who among his brethren had daughters, and where he should betroth his son, Muzaffar Jang. Kábila Khánum replied that Murtazza Khán† had three daughters, and Khudábandah Khán‡ had also three daughters. The Nawáb replied that Murtazza Khán was a troublesome fellow; should he object it would cause ill-feeling. Khudábandah Khán was, however, a mild-tempered, quiet man; and he requested her to go to his house and propose a marriage of his daughter with the Nawáb's son, Muzaffar Jang. The woman went off to the house,

* The celebrated Almás 'Ali Khán, 'Amil of the Duab districts from 1774 till the cession in 1801. Lord Valentia who saw him at Lakhnau on the 23rd March, 1803, describes him as "a venerable old-woman-like being, upwards of eighty, full six feet high, and stout in proportion." (Travels, I. p. 136).

† Fourth son of Muhammad Khán.

‡ Twelfth son of Muhammad Khán.

and after some indifferent conversation, mentioned her errand. The Nawáb made no reply. After a moment's pause, the woman said, "O Khudábandah Khán! why do you not answer and accept at once?" Nawáb Khudábandah Khán said, that Núr-un-nissa had been already adopted by the holy man, Asad 'Ali Sháh,* so that he was helpless. It rested with that saint to agree or not, and if he agreed there would be no objection. The *Khánum* replied, that the Nawáb must go and tell the Sayyad, when there was no doubt he would consent. Khudábandah Khán said he would go that evening. When he went, the Sayyad asked what he wished, but he said it was for the Sayyad to decide. The Sayyad thought that to accept was desirable, to make any objection would do harm, he should therefore consent gladly. The Nawáb returned and told the woman Kábila that he agreed to the proposal.

On receiving her report, Nawáb Ahmad Khán proceeded to the Bibi Sáhiba, the widow of Muhammad Khán, whom he told of what he intended to do, and he asked her, should she approve, to go the next day to Khudábandah Khán's house to carry out the custom of *chaṛáwah*.† She expressed her consent, and the next day went with great pomp to Khudábandah Khán's house and carried out the usual ceremonies. Next day the ladies from the other side came with the *nausha* and carried out the usual ceremonies.

After this Nawáb Ahmad Khán sent for Nawáb Khudábandah Khán. The Nawáb received him with especial kindness and embraced him. A friendly conversation began. Then Bakhshi Fakhr-ud-daula was sent for, and ordered to make out a grant of the town of Sakráwah (or Sakráya)‡ in the name of his beloved brother Khudábandah Khán. The secretary was to write it out at once, and, after obtaining the signatures of all the clerks in the office, it was to be brought to the presence. When the grant was brought, the Nawáb presented it to Khudábandah Khán and said it was in addition to all his former *jágírs*. Khudábandah Khán then took his leave.

Preparations began for the wedding. The Bakhshi and Mihrbán Khán were ordered to send food of every description to all the Muhammadans, from the first day till the day of the wedding. To the Hindus sweetmeats and almond confection were sent. The *khansámán* and Námdár Khán were directed to pitch tents within the fort for the Delhi nobles, so that each

* A Sayyad, son of Sharf-ud-dín Husain Bukhári; he came to Farrukhábád in Muhammad Khán's time (1713-1743); he fought on Ḳáim Khán's side and was wounded. He died on the 7th Safar 1184 H. (2nd June, 1770).

† Presents to the bride at betrothal.—*Qanoon-e-Islam*, p. 62.

‡ A parganah in Tahsil Tirwah in the south-east of the district.

might have his separate assembly. Dancing girls from far and near were gathered together, so that dancing might go on at all the different tents at once. At night all the nobles were invited, and each was conducted to a separate tent. To each were told off two chelas to attend on them and carry out their wishes. Nawáb Ahmad Khán sat in his own hall, with some of the greater nobles, such as Násir Khán, ex-Subahdar of Kábul, Nawáb Sháh Jiu, son of Kamr-ud-dín Khán Wazír, Nawáb 'Itiḳád-ud-daula, son of the Emperor Ahmad Sháh's maternal aunt, and Nawáb Manavvar Khán, brother of Roshan-ud-daula. The night passed in amusements, in looking on at dancing and buffoons' performances, or in listening to singing. These festivities went on for a month.

For illuminating the city, bamboo screens were put up along both sides of the road, from the gate of the fort to the gate of Khudábandah Khán's house. They adorned these screens with shades of mica and of coloured glass (*kanwal*) and with glass shades. Platforms adorned with brocade, cloth of gold and satin were prepared to carry the dancing women. This work was made over to Háji Sarfaráz Khán and Námdár Khán the elder. The fireworks were under Nasír Khán. Shafi Khán, *darogha* of the elephant stables, was ordered to prepare *haudahs* and *bangla* (covered *howdahs*) and *amára* (*howdahs* high at the sides) adorned with gold and silver. The elephants were to be in attendance at the gate of the fort. Bakhshi Fakhr-ud-daula and Díwán Mihrbán Khán were told that when the bridegroom mounted his elephant (*megdambar*) the nobles of Delhi were to be escorted to their elephants. The commanders of regiments and the jama'dars attended in their best raiment, accompanied by their relations.

When the procession was formed, the illuminations were lit in one blaze from the fort gate to Khudábandah Khán's. They were formed of mica shades (*kanwal*) and round globes (*ḳwinḳwina*) placed on the left and right of the roadway. In front there were lustres with five or six branches each, making a total of fifty or sixty thousand lights. Then followed the thrones on which the dancing girls performed. Thus, with splendour and display, the bridegroom's party advanced step by step. Fireworks were let off at intervals. From both sides gold and silver flowers were flung on the bridegroom for good luck. At length they reached the bride's door. The Nawáb and the bridegroom and the nobles entered, while the other leaders attended outside. Dancing and singing then began, and the whole night was thus passed. At day-break the bridegroom was taken into the women's apartments for the ceremonies usual there. Then coming out the bride was put into a *chanḍol* (a sort of sedan chair), which was covered with cloth of gold. All that Khudábandah Khán possessed in the way of goods and chattels, he sent with his daughter as her marriage present. Then the

return was made to the fort in the order in which they had come. At the fort all the nobles, chiefmen and bankers attended to congratulate the Nawáb, and made their offerings. Next day, rich gifts were bestowed on the dancers, the buffoons and the story-tellers. Suits of clothes were sent to every noble, to the Nawáb's brothers and brothers' sons, to the chiefs of the Bangash tribe and to the employés of the State.

Mahratta affairs: 1752—1771.

We have already described the rather complicated arrangement made at the peace of 1752. Safdar Jang then owed thirty lakhs, or as some say, eighty lakhs of rupees to the Mahrattas, as their pay for the time they had been in his service. This debt was transferred to the shoulders of Ahmad Khán, and as security the Mahrattas were to obtain sixteen and a half out of the thirty-three mahál then forming the territory of Farrukhábád. The Mahrattas, as usual, were the sole gainers, while Safdar Jang had no more than the empty gratification of having humbled his enemy.

At one time the Farrukhábád state is said to have consisted of forty-four mahals, but of these it is impossible to identify twenty-one, the names of which have not been handed down. Of the remaining thirty-three, sixteen and a half were assigned to Mulhár Ráo by a grant on copper, while a corresponding deed on copper for the other sixteen and a half mahál was made over to Ahmad Khán by the Mahratta. The grant was in the name of Mahmúd Khán, the Nawáb's son, and it stated that so long as a slave of the Bangash family was in existence, no Mahratta should interfere with those mahál.

The thirty-three mahál were as follows:—

1. *Shamsábád.*—In the Farrukhábád district; it is now divided into S. West in Tahsil Kaimganj, S. East and Muhamdábád in the Sadr Tahsil. In the Nawáb's time it included Tappa 'Azimnagar now in the Eta district. (Káli Ráe, p. 101.)

2. *Birwar.*—The old name of Bewar in the Mainpuri district, Gaz. IV. 657.

3. *Bhongám.*—Also called Bhonganw, in the Mainpuri district. It then included the present parganahs of Mainpuri and Kishni-Nabiganj, Gaz. IV. 670.

4. *Kampil.*—Now Kampil-Ḳáimganj in Tahsil Ḳáimganj, Farrukhábád district.

5. *Paṭiáli.*—Eta district, Gaz. IV. 174.

6. *Saháwar.*—Now Saháwar-Karsána, Eta district Gaz. IV. 181.

7. *Sakiṭh.*—Now Eta-Sakiṭh, Eta district, Gaz. IV. 187.

8. *Márahra.*—Half of the parganah. Now in the Eta district, Gaz.

IV. 158. In 1738 the Sayyad proprietors (who got the parganah in *jagír* from Farrukhsiyar in 1713) farmed 117 villages and the Nilgarán *patti* of the town to the Nawáb of Farrukhábád, and the other 60 villages with the Bhairon *patti* to Safdar Jang. The Nawáb Wazír took the first-named portion, known as *Kismat avval*, for himself in 1772, Gaz. IV. 162.

9. *Soron-Badariya.*—Eta district, Gaz. IV. 125, 213.

10. *Auset.*—Across the Ganges in the Badáun district.

11. *Nidhpur.*—(Also called *Miyáo*) Eta district, Gaz. IV. 165.

12. *Barná-Sonhár.*—Eta district, Gaz. IV. 205.

13. *Koráoli.*—Mainpuri district, Gaz. IV. 711.

14. *Siḍhpura.*—Eta district, Gaz. IV. 179.

15. *Karsána.*—Now included in Saháwar, Eta district. Gaz. IV. 181.

16. *Khákhatmau-Dahliya.*—Across the Ganges in Tahsil Aligaṛh, Farrukhábád district.

17. *Mihrábád.*—Across the Ganges in the south of the Sháhjáhánpur district. It once formed a part of Parganah Shamsábád, (Elliot Supp. Glossary, II. 92.)

18. *Amritpur.*—Across the Ganges in Tahsil Aligaṛh, Farrukhábád district.

19. *Chibrámau.*—Tahsil Chibrámau, Farrukhábád district.

20. *Sikandarpur.*—Now absorbed in Chibrámau (No. 19,) Farrukhábád district.

21. *Saurikh.*—In Tahsil Tirwa, Farrukhábád district.

22. *Sakráwah.*—Tahsil Tirwa, Farrukhábád district.

23. *Sakatpur.*—Tahsil Tirwa, Farrukhábád district.

24. *Auraiyá Phapond.*—In the Etawah district, Gaz. IV. 408.

25. *Sauj.*—In parganah Karhal, Mainpuri district, 24 miles from Mainpuri. The old parganah was dismembered in 1840, 25 villages going to parganah Mainpuri and 17 to Karhal. Gaz. IV. 752.

26. *Iṭáwah.*—In the Itáwah district. It formerly included parganah Karhal of the Mainpuri and Barnáhal of the Itáwah district. Elliot, Supp. Gloss. p. 309.

27. *Bhojpur.*—In the Sadr Tahsil of the Farrukhábád district. It included parganah Pahára.

28. *Tálgrám.*—In the Chibrámau Tahsil of the Farrukhábád district. In those days it included the Ta'luka of Thattya-Tirwa (*Káli Ráe*, p. 145.)

29. *Kannauj.*—In Tahsil Kannauj of the Farrukhábád district.

30. *Bilhor.*—In the Cawnpur district, the next parganah east of Kannauj.

31. *Sháhpur-Akbarpur.*—In the western part of the Cawnpur district.

32. *Shiurájpur.*—In the Cawnpur district, the parganah next to the east of Bilhor, No. 30.

33. *Musenagar-Bhogni.*—In the south of the Cawnpur district, along the left bank of the river Jamna.

We are not told which of these thirty-three mahals formed the sixteen made over to the Mahrattas. The management would appear to have been left in the hands of Ahmad Khán, though it is doubtful whether this refers to all the mahals, or only to the Nawáb's half. We are told that, after deducting the costs of management and the pay of the troops, the balance was payable to Mulhár Ráo. On the part of the Mahrattas two bankers were appointed, called by them *Bamman*, who were stationed one at Kanauj, the other at 'Aliganj in Parganah 'Azimnagar. The balance payable to the Mahrattas was made over to these two bankers, by whom the money was remitted to Mulhár Ráo. Receipts for each year were then forwarded to the Nawáb These payments were made for several years in succession. They ceased after the battle of Panipat, fought in January 1761, when the Mahrattas left Hindustan for a time, retired beyond the Jamna, and proceeded to the Dakhin.

For some years the Mahrattas were occupied in domestic struggles and in warfare south of the Narbada. Advantage was taken of their withdrawal from Hindustan to recover all the parganahs which had fallen into their hands. During 1761-1763 Shujá'-ud-daula cleared the lower Duáb of their posts and even advanced into Bandelkhand as far as Jhánsi. Nawáb Ahmad Khán, in the same way, took possession of many of the parganahs once held by his father, and no longer paid any tribute to the Mahrattas. Etawah, Phapond and Shikohábád, however, which had in 1761 been granted to Háfiz Rahmat Khán by the Abdáli monarch, were permanently severed from the Farrukhábád state.

Except for a short time at Delhi in 1764, and at the battle of Koṛah in 1765, no Mahratta was seen in Northern India for more than eight years. In the end of 1769, however, the Peshwa's army, amounting to fifty thousand men, crossed the Chambal. It was under the command of Visají Kishn, Ram Chandar Ganesh, Mahádaji Sendhiá and Tukáji Holkar. First they levied arrears of tribute from the Rajput princes. Next, after a victorious engagement fought close to Bhartpur, they obtained sixty-five lakhs of rupees from the Jáṭ princes. Overtures were then made to them by Najíb Khán, and it was agreed that their combined armies should march against Farrukhábád.*

Early in the year 1184 H. (27th April, 1770—16th April, 1771),Najíb Khán advanced from Delhi. Háfiz Rahmat Khán, whose son's *jágir* of

* Grant Duff, pp. 349, 350.

Itáwah was threatened, marched to Ḳádir-Chauk on the Ganges. Here he learned that Najíb Khán, having been taken ill at Koil, had set out for Najíbábád. On his road he died at Hápar in the Meerut district. His death occurred in the month of October, 1770. His eldest son, Zábita Khán, proceeded with the Mahrattas towards Farrukhábád.

Háfiz Rahmat Khán sent fifteen thousand horse and foot to the aid of Ahmad Khán. On hearing that the Mahrattas were at Paṭiáli, some forty miles west of Farrukhábád, Háfiz Rahmat Khán marched in person to Fathgaṛh and encamped on the east bank of the Ganges. A consultation was then held with Ahmad Khán. A bridge of boats was constructed, and the remainder of the army, about twenty thousand horse and foot, crossed the Ganges and encamped between Fathgaṛh and Farrukhábád.

Meanwhile Zábita Khán wrote to say that he was a prisoner in the hands of the Mahrattas. Negotiations began for his release and the withdrawal of the Mahrattas. The Mahrattas claimed Itáwah and Shikohábád, which had been long in their possession before they were handed over in *jágir* to Háfiz Rahmat Khán. During this period Najíb Khán's army arrived from Ghausgaṛh* and Najíbábád.† Zábita Khán succeeded in escaping during the night and, joining his troops, returned home.

The war was now carried on by the Mahrattas alone. In several actions they defeated the Afgháns, who behaved badly. At length the Rohelas were on the point of re-crossing the Ganges, when the Mahrattas broke up their camp and marched for Itáwah. 'Ináyat Khán, son of Háfiz Rahmat Khán, was then asked by his father to give up his *jágir* of Itáwah. He refused and retired in disgust to Bareli. Donde Khán, however, relinquished his claim on Shikohábád. Orders were sent to Shekh Kabír to resign the fort of Itáwah to the Mahrattas. Shekh Kabír, who had in the interval repulsed the Mahrattas several times, obtained honorable terms. He then joined Háfiz Rahmat Khán at Farrukhábád, and all the Rohelas returned to Bareli after an absence of eight months (October, 1770—May, 1771).‡

At this time Sendhiá entered the Nawáb's territory and encamped at Nabiganj, some twenty miles south of Farrukhábád. Bakhshi Fakhr-ud-daula proposed to collect forty thousand men and attempt resistance. The Nawáb, who was old and blind, said he knew they would fight to the last man, but the Bakhshi was the blind man's staff, and if the staff (which God forbid) were broken, the blind man would be destroyed. He therefore desired that a peace should be made as quickly as possible. The Bakhshi taking with

* Between the towns of Thána Bhowan and Jalálábád in the west of the Muzaffarnagar district. A mosque and a large well are all that is left to mark the site.

† In the Bijnor district.

‡ Life of Hafiz Rahmat Khan, pp. 89—93.

him Ghází-ud-dín Khán 'Imád-ul-Mulk, visited the Mahrattas and asked what terms they would accept. Sendhiá claimed the sixteen and a half maháls given by the former treaty. He wished to collect the revenue himself, for while the Nawáb had the management, years had elapsed without any payment having been made. As there was no help for it, the sixteen and a half maháls were given up. Ahmad Khán directed that although the territory had been reduced to one half its former extent, no troops should be discharged. In three years his eyes would be all right, and then he would take his revenge. The income being reduced, while the same expenditure was maintained, the coin collected in the treasury was soon spent.

Ahmad Khán's blindness and death.

For a year or two before his death, Nawáb Ahmad Khán was afflicted with inflammation of the eyes, and he gradually lost his sight. One Basant Ráe *Kuḥḥál* (operator on the eye) treated him for the malady, but without success.

His eyes had begun by paining him, and after a time his sight became weak. One or two years passed in this condition, but day by day the sight became worse. He concealed the fact as well as he could. He used to come to his ordinary place and return every one's salutation. The courtiers, from actions opposed to his usual habit, noticed his blindness but said nothing. At length the defect could no longer be concealed. Several of the Nawáb's servants recommended Hakim Núr Khán Muhammad Sháhí, as well spoken of for his treatment of deseases of the eye. They were told to bring him, and he treated the Nawáb for one or two months without effect.

One day it came into the Nawáb's mind that by feasting religious mendicants, his vows might be granted. He therefore ordered Bakhshi Fakhr-ud-daula and Mihrbán Khán to put up tents inside the fort. Food of every sort was prepared and given to *fákirs* and the poor. They offered up their prayers for his recovery. For forty days the food was given away. The pious Hisám-ud-dín adduces many instances of the efficacy of prayer by holy men; but he admits that in this instance the prayers were not heard, for, as he says, the supplicants were not saints.

Shortly after this a clever scoundrel came from the Panjáb, and was introduced to the Nawáb through Rahmat Khan, son of Jahán Khan. He promised to remove the obstruction. The cheat, putting a little water in the palm of his hand, said some words over it, and then applied it to the Nawáb's eyes. For several days this process was repeated. Then under pretence of requiring money to offer in alms, he got silver and gold and went away, promising to return in a day or two. He was never seen again.

Another cheat was Sayyad Bákir. He wrote a forged letter in the name of a holy man of Lakhnau to Ján 'Ali Khán, saying he had heard that Nawáb Ahmad Khán had lost his eyesight and had given up all hope except in the intercession of *fakirs*. Now in the city of Farrukhábád would be found a *fakir* of great holiness, chief of the age, whose name was Sayyad Bákir. There was little doubt that he would be able to restore the Nawáb's eyes. Ján 'Ali Khán went with the letter to the Nawáb. The Nawáb told him to obey its directions. Bakhshi Fakhr-ud-daula and Ján 'Ali Khán proceeded to that deceiver and with the profoundest respect brought him to the Nawáb. The Nawáb presented him with five hundred rupees and a number of rich dresses. The *fakir* said food must be distributed daily, while he underwent a forty days' fast, for which a secluded place must be provided. The Nawáb ordered Ján 'Ali Khán to find the man a place in his garden. Then that lying philosopher promised the Nawáb that sight would return to his eyes on the festival of the 'Id-ul-fitr. Ján 'Ali Khán took the *fakir* to his garden and placed men to watch him. As the promised time drew near, one night in the end of Ramzán, the cheat got over the back wall of the garden and escaped. On the day fixed Ján 'Ali Khán was sent to bring the *fakir*. He went into the garden and called, but there was no answer. Then he looked about and could find the man no where. Wringing his hands, he came out of the garden and sat down at his own entrance gate. For very shame he was unable to appear before the Nawáb. At length the Nawáb sent to know what had happened. Ján 'Ali Khán was forced to go and reported how they had been deceived. The Nawáb after this ceased to repine and put his full trust in God, whose will is best.

Nawáb Ahmad Khán breathed his last on the 28th Rabi I, 1185 H. (12th July, 1771), the day on which 'Ali Guhar Sháh 'Alam reached Khudáganj, on his way from Allahábád to Delhi. After a delay occasioned by the disturbance raised by Murtazza Khán, the body was taken out and buried in the Bihisht Bágh, in the tomb prepared by Ahmad Khán in his own lifetime.

The date of his death is given by the following chronogram—

Kunand giriya kháláik ba-nálah o Afghán.

Maláik áh kashand az wafát Ahmad Khán, (1191—6 = 1185).*

Another is—"*Hai, Hai, Hátim Ṭáe ṣáni na mánd,*" (1185).

The Emperor with his escort of some five thousand men marched on the next day, accompanied by Shuja'-ud-daula and others,† and encamped

* Miftáh-ut T., p. 526.

† The '*Ibrat-námah* states that Shuja'-ud-daula, after visiting the Emperor at Allahabad, returned to Faizabad. The text gives the local tradition.

at the village of Saraiya in parganah Pahára, outside the south-west corner of the city. Bakhshi Fakhr-ud-daula placed Muzaffar Jang, the Nawáb's son, on an elephant and took him to present his *nazar* to the Emperor. The title of Farzand Bahádur (afterwards cut on the young Nawáb's seal) was conferred at this interview. There being no money in the treasury, the Bakhshi melted down all the silver of the *howdahs* and other furniture and sold it for three lakhs of rupees. This sum with seven elephants and eleven horses was presented to the Emperor.* One lakh of rupees was obtained by Najaf Khán for arranging a settlement. After a halt of twenty-two days, Sháh 'Alam marched to Nabiganj, where he waited nearly three months, till the arrival from Delhi of Mahájí Sendhia.

Anecdotes showing Ahmad Khán's habits and character.

His full titles, as found on a cannon cast in 1173 H. (August, 1759—August, 1760), which was still in existence in 1839, were as follows :—Bakhshi-ul-Mamálik, Amír-ul-Umrá, Ghazanfar-ud-daula, Muhammad Ahmad Khán, Bahádur, Ghazanfar Jang, Sardár-ul-Mulk, Zafar-i-iḳtidár, Sher-i-Hind, Bahádur, Ghálib Jang. To these may be added the title of *Kayám-ud-daula* which was, according to the *Táríkh-i-Muzaffari*, conferred in 1175 H.

He seems to have had little natural energy or ambition ; he was emphatically one of those who, instead of achieving greatness, have greatness thrust upon them. In the course of our story we have seen repeatedly how his timidity or ill-timed scruples prevented him from pushing home a first success. After the battle of Rám Chatauni such was the state of consternation and want of preparation in the capital, that Ahmad Khán, had he not been turned off by fair words, could easily have made himself master of the Emperor's person. He could then have played the part afterwards so successfully assumed, one after the other, by Ghází-ud-dín Khán, Najíb Khán, Najaf Khán and the Mahrattas. Again, when Islám Khán, chela, was *'Amil* of Kásganj, he made a successful raid into the upper Duáb, and it is highly probable that, had he been strongly supported, he might have carried out his boast of making his master the actual master of Delhi and its sovereign.

Stories are told of him in which it is hard to distinguish whether his conduct was due to mere good nature or foolish simplicity. For instance, we are told that the Nawáb had an extreme affection for new money. It was his habit to have the rupees spread out in the sun to prevent them getting black. Seated on a low stool, he watched them himself. Whenever he called for water or betel leaf or his *huqqa*, the chelas would go in

* Miftah-ut T., p. 529, and S-ul-M. (Lakhnau edition) at the top of page 931.

with wax on their feet. In this way, in the course of five or six hours, they would carry away some hundreds of rupees. When the money was counted and put back, some of the bags would remain unfilled. Then the Nawáb would be surprised and say to his chelas, "I do not know how it is, but I "watched these rupees myself, and yet they have diminished. Perhaps they "have been exposed too long to the sun and have got too much dried up. "Go and place the bags in the treasury."*

It was the Nawáb's habit to go out twice a day, sometimes on an elephant and sometimes in a *palki*. At other times, quitting the city, he looked on at elephant-fighting. As he passed through the streets of the city, he was attended by men carrying bags of money for the distribution of *largesse*. Their orders were to allow the approach of the humble poor, the weak, the blind, the lame and the sick. To all these money was given; not one poor man was passed over. Especial protegés of his were the so-called *Khopiwálás*.† Some hundreds of families lived along the road side from the fort to the Mau gate, and below the fort as far as the edge of the Kadam Sharíf pond. They were people of all castes, who had followed the Nawáb's camp from Delhi in a year of famine, he having distributed five thousand rupees a day in food during his stay there. They acquired their name from the rough earthen huts which they built to live in, not having funds to build houses in the usual way. The Nawáb would often send money and food to them, saying, that they must not starve, since they had left their homes to follow him.

The Nawáb's retinue was accompanied by numerous *Saláyah-bardárs* (?) spearmen, (*barchi-bardárs*) lancemen, (*bhála-dárs*) macemen, (*chobdárs*) heralds, (*naḳibs*) flatterers, (*bád-farosh*) bards, and (*karkah-go*) singers. The Nawáb's titles were announced and his praises cried out as the procession moved on. It was preceded, at a little distance, by a number of men with bambu sticks, lacquered in various colours, gold, scarlet, and so forth, some plain and some with flowered patterns. For about two cubits of their length these bambus were split. If any one came in the way of the retinue, whether rich or poor, he was beaten with those bambu sticks. They were also used to anybody who incurred the Nawáb's anger. The sound made by the blows was so great, that it could be heard a quarter of a *kos* off, though no wound was caused; any one who was beaten considered that his lucky star was in the ascendant, for the Nawáb was sure to send for him. Then he would say "You have not been hurt;" and the man would reply "Nawáb Sáhib, each bone in my body aches as if it had been broken."

* This story is in the main confirmed by Shekh Allahyár, author of the *Hadíkat-ul-Akálím*, who was at Farrukhábád in 1769-70, in the employ of the Nawáb.

† Apparently from *khop* = a cave or cavern.

Then he would receive a present in cash and goods, to the amount that his fate had willed for him.

The Nawáb is said to have had a peculiar affection for the tune *(rág)* known as *Bihág*. On his birthday the singing women and male dancers (*bhakta*) were assembled from every part of the territory. About nine o'clock in the evening, the Nawáb used to come to the *Diwán-khána*, with all his most costly jewels on, seated in his fringed *palki* "*Fatḥ-naṣíb*." (Fated to Victory.) This *palki* got its name from being the one used by the Nawáb during the battle, in which he totally defeated 'Abd-ul-Mansúr Khán, Safdar Jang. At the side of the *palki* walked all the leading Paṭháns and the Nawáb's cousins and nephews. There was a general illumination and discharge of fireworks. At this time no other kind of singing was allowed except the *Bihág*.

The Nawáb's taste was for highly decorated buildings, and where he slept, he had the walls adorned with pictures of himself and his friends. During his time he built six palaces. 1st, The Khás Mahal, where in 1839 Bibi Achhpal (widow of Muzaffar Jang) lived, and its doors, said to be copied from those of Harbong's foot at Jhúsi, still showed the decorated work. 2nd, The Mubárik Mahal. 3rd, The Salábat Mahal. It was situated at the back of the Moti *masjid*. Originally the doors and ceilings were gilt, but before 1839 the colour had been scraped off and taken away to extract the gold from it. 4th, The Hall of Audience in the Mubárik Mahal, occupied in 1839 by Wiláyati Begam, widow of Nawáb Násir Jang (1796—1813). 5th, The Kamáni gate of the fort. A stone, removed from this gateway in 1858-9, is preserved at the Sadr Tahsil ; it is in shape like a milestone, and bears the following inscriptions in raised letters :

I. *Ẓahi báb daulat bar afráshtand Biná-ash chú ḳutb-i-falak sákhtand*
Barú núr razed 'z charkh barín Chú bárán-i-raḥmat barúe-zamín
Matín muḥkam o ustwár ámdah Chú uftád falaki ḳarár ámdah
Máh o sál án hátif dil-nawáz Bagufta "Dar-i-faiz didam báz."
(1172)

II. *Nawáb ín darwázah rá ta'mír chú farmúdah ast*
Yak hazár yak ṣad haftád iṣná búdah ast.

6th, Some buildings and repairs to a fort at Mau Rashídabad, which has now entirely disappeared.

The Nawáb also paid attention to repairing the fort, restoring the city wall and renewing the Haiyát Bágh, where Muhammad Khán, his father, and Ḳaim Khán, his brother, were interred. In the open space between the fort wall and the gate of the Diwán Khána he put up a *Gulál-bár* (a royal pavilion.)* There the leaders and commanders and lieutenants came and,

* See Blochmann's "Ain i Akbari," Vol. I, plate X for a representation of one.

standing, made their obeisance, after which the Nawáb acknowledged their presence and took his seat.

The Bihisht Bágh, just south of the Mau Saráe, within the city wall, was planted by Ahmad Khán. The mosque is perhaps the largest and most elegant in the city, and at one side of it there are the remains of a handsome hot air bath. The Mohalla just to the south, chiefly occupied by Káchis, is called Ahmadganj Khandia. Besides the mosque, there are nine large domed tombs within the enclosure, that of Ahmad Khán, the largest of all, standing nearly in the centre, opposite the gateway. The persons buried there are as follows: *Makbarah No.* 1.—Ahmad Khán; Dil-Daler Khán; the Banársi Nawáb, his son; Zahúr 'Ali Khán, son of the Banársi Nawáb; Imdád Husain Khán, son of Dil-Daler Khán. *In the verandahs*—Himmat 'Ali Khán, son of Dil-Daler Khán. Three tombs of infant daughters of Ahmad Khán; Nawáb Himmat Bahádur, grandson of Ahmad Khán; Nawáb Chote Khán, son of Nawáb Ḳáim Jang. *Makbarah No.* 2.—Nawáb Mahmúd Khán, eldest son of Ahmad Khán; a child; and his Begam. *Makbarah No.* 3.—The Bibi Sáhiba, widow of Nawáb Muhammad Khán Ghazanfar Jang, and two other Begams. *In the verandahs*—Sitára Begam, daughter of Ahmad Khán; Firúz Jang's mother, wife of Nawáb Buláki; Bíbí Achhpal, wife of Muzaffar Jang; five Begams, names unknown. *Makbarah No.* 4.—Ḳábila Khánum. *Makbarah No.* 5.—A mistress of Shaukat Jang (1813—1823). *Makbarah No.* 6.—Two graves, names unknown. *Makbarah No.* 7.—Ráni Sáhiba, wife of Ahmad Khán brought by him from the east. *Makbarah No.* 8.—Táli' Khán and Roshan Khán, chelas of Ahmad Khán. *Makbarah No.* 9.—Bakhshi Fakhr-ud-daula, assassinated in 1772-1773.

We are told in the *Lauh-i-Táríkh* that the revenue demand of the thirty-three mahals was eighty lakhs of rupees, exclusive of *jágírs*, assignments for pay, revenue-free grants, and so forth. Hisám-ud-dín tells us that the Nawáb's income was sixty lakhs of rupees. The expenditure was as follows: Three lakhs a month were required for the soldiers' pay and the household servants of every fort. One lakh went to the expenses of the three wives, to the purchase of jewels, and the feeding of *fakirs*. One lakh was spent on the elephants, horses, camels, and artillery establishment. There were five hundred guns, large and small, always ready; and the manufacture of powder and ball went on without intermission. There was in this way an expenditure of at least five lakhs a month; if there were ever any surplus, it was paid into the Treasury.

In the later years of Ahmad Khán's life, Bakhshi Fakhr-ud-daula had become the leading man in the State. He had the charge of the whole territory, and he is praised for the vigour with which he repressed the tur-

bulent. Sometimes Miyan Sáhib Roshan Khán was sent eastwards to restore order. This office of *Miyan Sáhib*, or familiar companion of the Nawáb, was held by a number of persons in succession. The first was Sa'datmand Khán. He was a boy, named Madan Singh, whom Roshan Khán captured on one of his expeditions, when he destroyed the village of Sabzpur (?). When Ahmad Khán saw the lad, he took a fancy to him, made him a Muhammadan and gave him the name of Sa'datmand Khán. A year afterwards he raised him to high rank and gave him the title of Amír-zádah, telling Bakhshi Fakhr-ud-daula that every act done by Amír-zádah Sa'datmand Khán was to be considered as final, no one was to interfere. His father, Mandal Singh, was made ruler of Kanauj.

The other *Miyan Sáhibs* were: (1) Sa'dat Khán Afridi, (2) Sayyad Núr 'Ali Khán, (3) Mír Ján 'Ali Khán, (4) Roshan Khán. Sa'dat Khán was the brother of Mahmúd Khán, Bakhshi to Nawáb Ḳáim Jang. He was appointed during the campaign in the hills (1751-2). One day the Nawáb had seen him in the bazár of Sayyad Núr 'Ali Khán and sent for him. Once the Nawáb was reading a book, while Sa'dat Khán was seated behind him to the right, engaged in keeping the flies away. Sa'dat Khán in a disrespectful way brushed with the *chaunri* the head of Núr 'Ali, who was seated next him. The Nawáb saw this and said to him, "The Omnipotent is Lord over all,—

"*Ba-chashm-i-ḥaḳárat ma-bín ba-súe kas*
"*Kih ú mantaḳam hast, o faryád-ras.*"

Now, it was Sa'dat Khán's habit to go every fifth or sixth day to spend the night at his own house in Amethi, returning to his post in the morning. A short time after the above incident, Sa'dat Khán asked for leave to go home. During the night, the Nawáb conferred on Núr 'Ali Khán double the dignity and wealth that Sa'dat Khán possessed. At the appointed time Sa'dat Khán appeared, and what should he see, but Sayyad Núr 'Ali adorned with jewels and seated on the edge of the *masnad*, at the right hand of the Nawáb. He fell into great consternation. On his approaching, the Nawáb spoke to him—"Look, Sa'dat Khán, at the work of the Causer of "all things, remember yesterday's words,—"

Chunán hast án kháliḳ be-nazír,
Ba-yak lahza sázad gadá-rá amír.
Makun ba súe kas az haḳárat nigáh;
Kunad az takabbar sháhán rá faḳír.

"Such are the ways of the Creator without equal, in a moment He "makes a beggar into a noble, and turns a king into a beggar." Hearing

this reproof, Sa'dat 'Ali Khán was much abashed and hung down his head. A few days afterwards, he was appointed to the command of a regiment of two thousand horse.

Núr 'Ali Khán succeeded as Miyan Sáhib, and he received gifts and honours above all the other courtiers. He in turn was displaced by Mír Ján 'Ali, and he was then transferred to the maháls of Derapur-Mangalpur (now in the Cawnpur district). Ján 'Ali's father had been adopted by Mír Fath-ullah. When the Nawáb saw Ján 'Ali, he took a fancy to him and kept him at his court. His title was Miyan Sáhib Ján 'Ali Khán. He built the *masjid* on the left, as you turn out of the main bazar to drive up to the *Tahsil* in the fort. In the course of time, the Nawáb transferred his favour to Muhammad Roshan, a resident of Kanauj, and he becoming Miyan Sáhib was enriched with gifts like his predecessors. He was styled Miyan Sáhib Roshan Khán Bahádur.

Ahmad Khán's wives.

There were four wives:

1. *Dulhin Begam*—The daughter of Sanjar Khán, Paṭhán, zamindar of Rudáin, parganah Kampil.

2. *Ráni Sáhiba*—She was brought by the Nawáb from the east at the time of the siege of Allahábád.

3. *Bibi Fakhr-un-Nissa*—the sister of Karm Khán.

4. *Bibi Khairan*—the mother of Muzaffar Jang and Dildaler Khán.

There were besides many concubines. In the above list it is difficult to identify the daughter of Sher Zamán Khán Dilázák of Jaunpur, who was, according to the *Balwantnámah* (year 1164 H.), one of the wives of Ahmad Khán. In that work there is a Karm Zamán Khán named as a nephew of Sher Zamán Khán, so possibly the Karm Khán of the Farrukhábád books was the Begam's cousin instead of her brother. In that case the Jaunpur wife would be Fakhr-un-Nissa, No. 3 of the list.

Ahmad Khán's children.

He had three sons and one daughter:

1. *Mahmúd Khán*—He died in his father's lifetime and was buried in the Bihisht Bágh. Mahmúdganj in the town of Chibrámau was founded by him (*Káli Rae*, p. 134). He left one son, Himmat Bahadur, who married 'Umdah Begam, daughter of Muzaffar Jang, and died in 1240 H. (August, 1824—August, 1825), leaving one daughter, Riyázat-un-Nissa, who was twice married, first to Imdád Husain Khán, son of Dildaler Khán; secondly to Himmat 'Ali Khán, a younger brother of her first husband.

2. *Daler Himmat Khan*—Muzaffar Jang, who succeeded his father. He will be dealt with separately.

3. *Dil Daler Khan*—He retired to Benares about 1786, and the tradition is that he committed suicide there in January, 1799, at the time of Wazír 'Ali Khán's rising. The story will be told in Part II. From the Agency records it appears, however, that he died on the 19th Sha'bán 1214 H. (18th January 1800), fully a year after Wazír 'Ali's insurrection. He left four sons and three daughters, whose names with their alliances and descendants will be seen from the genealogical table appended to this Part.

4. *Sitára Begam*—She married Muhammad Zamán Khán, son of Murtazza Khán Barsiri, *i. e.*, the big-headed, fourth son of Nawáb Muhammad Khán. When she died, she was buried in the Kásim Bágh, beside her aunt, Roshan Jahán, eldest daughter of Nawáb Muhammad Khán. She was supposed to share with her aunt the power of driving away evil spirits. Others point out her tomb in the Bihisht Bágh (see p. 157).

Ahmad Khán's Chelas.

According to the custom of the family, Nawáb Ahmad Khán made about three or four hundred Hindu boys into chelas. Those who had charge of his territory acquired much wealth; the rest who received only pay and gifts rose to no eminence. They were all known as Ghálib Bachha.

1. *Zu'lfikár Khan*—In Ahmad Khán's time there were three men known as nawábs, at whose houses the "*naubat*" was played: 1st, Ahmad Khán himself, called the *Bare nawáb;* 2nd, Zu'lfikár Khán, called the *Majhle nawáb;* 3rd, Dáim Khán called the *Chhote nawáb.* Zu'lfikár Khán's titles were "Sharf-ud-daula Zu'lfikár Khán Bahádur Shamsher Jang." His seal bore the inscription—

Án kih dar bázúe-pákash kuvvat khair dar est
Az 'atáe Ahmadí khúsh Zu'lfikár Haidar est.

He was Názim of parganah Shamsábád and had his head-quarters at 'Aliganj, Tappa 'Azimnagar, (now in the Eta district). Up to 1839 a fine building, a *bágh*, and women's apartments existed there. He repaired all the dilapidations in the town wall and in the fort built there by Yákút Khán.

2. *Dáim Khan*—Islám Khán, chela of Shamsher Khán, chela of Nawáb Muhammad Khán, had two sons (1) Roshan Khán and (2) Dáim Khán. The elder brother, Roshan Khán, was one of the courtiers of Nawáb Ahmad Khán. When Dáim Khán was six or seven years old, one day Roshan Khán took him in his *palki* to the Nawáb's audience. The Nawáb asked whose child he was. Roshan Khán replied, that he was his younger

brother. The Nawáb then asked his name, and he was told it was Dáim. Ahmad Khán said he would adopt him and gave him the titles of 'Azim Jang Muhammad Dáim Khán Bahádur, but he was popularly known as the Chhoṭe Nawáb. When he grew up he was married with great display to Muni Bibi, the daughter of Bakhshi Fakhr-ud-daula.

In his childhood the Emperor Ahmad Sháh had held him in his lap, fed him and with his own hand put on his shoulders miniature kettle-drums (*naḳḳárah* and *ḍaukí*), thus conferring upon him the "*naubat.*"

In 1839 buildings still existed in the city, which had been built by this chela. (1.) There was a masonry bridge (known still as "*Pul-pukhta*"), in the middle of the city, which had stood then the heavy traffic of seventy or eighty years. There were also (2) a masonry well with steps at the Mau gate, which is still in existence, although out of repair, and (3) a mansion within the fort, to the north of the Imámbára; it was afterwards occupied by Ahmad Yár Khán Náib (died 9th December, 1839); and in 1839 was known by the name of Himmat Bahádur's house. (4) Dáim Khán's Mahal-Saráe was at one side of the fort, in the low land, surrounded by the houses of poor people; and near it was a private enclosed garden (*Khána bágh*). His descendants dismantled the buildings, sold the materials, and having consumed the proceeds, handed over the land to cultivators. (5) He also planted the *bágh* near the Mau gate called the Chahár Bágh, afterwards in the possession of the Nawáb Rais, and (6) he planted a *bágh* and made a masonry well with four runs near the Madár Darwáza, traces of which existed in 1839. (7.) There is a Dáimganj adjoining the town of Chibrámau, which he established and named it after himself.

So long as the parganah belonged to the Farrukhábád Nawáb, Dáim Khán was the nominal manager of Parganah Sháhpur-Akbarpur (now in the Cawnpur district). The *jágir* of Pukhráyán in that parganah was continued to him by Miyán Almás 'Ali Khán, the Audh 'Amil, and it remained with the family till it was sold by auction in 1845, in execution of a decree of the Civil court.

Dáim Khán himself paid no attention to business, he left all such work to *kárindas* who embezzled the money. Nawáb Dáim Khán would then be forced to pay out of his pocket, or would beg Ahmad Khán to remit the amount. His whole time was spent in taking his ease, in hunting with falcons or *bajri* (a kind of hawk), in shooting tigers, in *chita* hunting, in wrestling or gymnastics, in listening to singing or looking on at dancing. Nawáb Ahmad Khán had given him lakhs of rupees or goods, by way of present, but he squandered it all in his pleasures. By Muni Bibi he had three sons: (1) Daler 'Ali Khán, entitled Fath Jang, (2) Rustam 'Ali Khán, (3) Ahmad 'Ali Khán. Daler 'Ali Khán had a son, Madár Khán, who turned *fakir* and took the name of Mahndi Sháh. Rustam 'Ali Khán

had no children. Ahmad 'Ali Khán had only one daughter, and she married a Paṭhán of some village near Koil. From Dáim Khán was derived much of the information recorded by Bahádur 'Ali, joint author of the *Lauḥ-i-Táríkh*, his grandfather Sayyad Ghulám Hussain (who died 1226 H. January, 1811—January, 1812), having been for forty years in Dáim Khán's service, and lived at the gateway of his house in Farrukhábád.

3. *Fakhr-ud-daula*—He was a chela of Muhammad Khán's time (see p. 346, Vol. XLVII.). He was Ahmad Khán's first Bakhshi, and played a prominent part in the later years of that Nawáb's life, and in the first year of Muzaffar Jang's reign. He was assassinated in 1772-3 and is buried in the Bihisht Bágh.

4. *Rahmat Khán*—He was the son of Jahán Khán, chela of Muhammad Khán. He became second Bakhshi. He was fond of men of learning and passed his time in fasting and prayer. He was noted for his generosity and bravery.

5. *Háji Sarfaráz Khán*—He was the third Bakhshi. He had the peculiarity of prefacing every sentence he spoke with the words "*B'ismillah.*"

6. *Námdár Khán*—No. 29 in list of Muhammad Khán's chelas. The fourth Bakhshi.

7. *Mihrbán Khán*—He held the post of Diwán. He was the son of a Rájah whose father, during the Allahábád campaign, presented him to the Nawáb. He was a poet, had written a *Diwán* and was very eloquent; Wali-ullah gives us a specimen of his poetry. The celebrated poets, Mirzá Rafi' Sauda and Mír Soz, were for a long time in his employ.

8. *Islám Khán*—At one time he held the office of third Bakhshi. He had a house close to the Buland Mahal in the fort (which in 1839 was occupied by Nawáb Tajammul Husain Khán, Zafar Jang). Once Nawáb Ahmad Khán asked him how many sons he had. Islám Khán replied, that he had five, Amána, Karámata, Bakwa, Rahmaná, Barhná. The Nawáb, out of sympathy for his large family, appointed him Faujdár of Kásganj (now in the Eta district). Islám Khán started, taking as usual some of the Nawáb's foot soldiers and a couple of guns. When the money-dealers and landholders came to present their offerings to the new Faujdár, Islám Khán, addressing them in full durbar, said he had been sent to procure money, and within eight days the monied men must produce one lakh of rupees. He would give a bond making the money repayable with interest from the incoming revenue. They all began to make excuse. Then Islám Khán set up a triangle and had several money-lenders flogged. To save their honour, the rest joined together to provide the lakh of rupees. Islám Khán gave them a bond for the amount.

He then wrote to the Paṭháns of Mau, Káimganj and Shamsábád, calling for men to take service. Any one between twelve and sixty years of age might present himself, and the Ámil's message was, that if he refused to employ them, on him should be the curse; if they failed to come, on them let it be. In one month he had collected five thousand men. He then marched from Kásganj towards Márahra and began to plunder the villages of the Háthras* and Mursán Rájahs,† both now in the Aligarh district. The people began to ask what sort of a Tahsildar this was who, instead of looking after his parganah, got together an army and went to war.

It was reported to Nawáb Ahmad Khán that Islám Khán, having levied a lakh of rupees from the Kásganj money-lenders by threats of imprisonment, had started with an army, and had already plundered the Ját of Mursán. It was said that he had reached Firúzábád;‡ that he had surrounded it with his horsemen and had not retired till he had received twenty thousand rupees.

Nawáb Ahmad Khán sent a parwánah to Islám Khán by a camel rider's hand, saying he had only intended to provide him with enough to live on, what was this that he had done? By entering another's territory and plundering in all directions, he had caused disgrace to his master's name. Islám Khán's reply was, that the Nawáb had no reason to be dissatisfied, for in two months he would seat him on the throne of Delhi. His army had risen to close upon ten thousand men.

The Rájah of Háthras wrote to complain of the invasion, and the Nawáb replied, that the slave had rebelled, and the Rájah should punish him. On receiving this reply, the Rájah of Háthras called on the Rájah of Bhartpur, a Ját and related to him, for the aid of his troops. The Rájah of Bhartpur sent one thousand men to Háthras. There were several encounters with Islám Khán's troops, and numbers were killed on both sides. At length Islám Khán's army was defeated, and all his money was used up. Then Islám Khán mounted his Iráni mare, and rode in one day from near Mursán to Farrukhábád. On hearing that he had arrived, the Nawáb sent for him and enquired why he had behaved like a scoundrel in plundering the country. His answer was, that he had determined to take Delhi and seat the Nawáb upon the Imperial throne, but fate had not so willed it The Nawáb was forced to smile, and after a long time he was restored to his post of Bakhshi. Meanwhile his army, on being left to itself, dispersed.

They say that this chela was by caste a Kalár (spirit-dealer). His

* Gaz. N. W. P. II, p. 429.

† Gaz. N. W. P. II, p. 435.

‡ This cannot be the place of that name between Agra and Etawah, and I know of no other.

five sons adopted the Shia heresy, and two of them were killed at the Farrukhábád *Karbala* during the Muharram ceremonies. They were named Ibráhim Khán and Rahmán Khán (Rahmáná). Another son was killed in a private quarrel at the door of Rahmat Khán *Sawárah-wálá*. The fourth died a natural death. The fifth, Amán Khán, was alive when Bahádur 'Ali wrote in 1839.

Islám Khán is said to have been in twelve fights, and he had received many wounds. Every day he drank spirits, but in Farrukhábád in Muzaffar Jang's time that was thought no fault. If any friend asked him his sect he would say, "Besides Allah, I know nothing, and my creed is this '*La-*"*illah-illa-allah, Ahmad Khán rasúl allah,*' for has he not made me from "a Hindu into a Muhammadan." He was so attached to intoxicating liquor that on the day he died, some hour or two before his death, he had a bottle of spirits and a cup beside him. He went on demanding spirits from his sons and drinking. One son said "Khán Sáhib, your death is now "near, renounce wine, and God will forgive your sins." He said to him, "My son, why renounce it now, I never did so when I was well, bring me "the wine-cup and fill it to the brim." He drank and shortly after expired. As an instance of his freedom of spirit, they relate that he was once sent as *Kotwál* to Mau, which he brought into thorough order. One day, however, a Paṭhán attacked him and cut him with a knife. Islám Khán came away at once and remarked to the Nawáb that his sons-in-law, *i. e.*, the Paṭháns, were coming to take possession of his city and fort.

9. *Diláwar Khán*—Called *Chunti* or the ant, from the extreme irascibility of his temper. I know not if this is the Diláwar 'Ali Khán mentioned by Káli Ráe, (p. 108) who was 'Amil of 'Azimnagar. That man had been a Thakur, and was the son of Dhan Singh and the brother of Tej Singh.

10. *Sulaimán Khán*—Darogha of camels.

11. *Shuja't-dil Khán*—Called Shuja'-ud-daula, who held the office of Khánsámán.

12. *Musharraf Khán*—Mír Tozak. He was a chela of Muhammad Khán's time.

13. *Jowáhir Khán*—'Arz Begi.

14. *Bakht-buland Khán*—Apparently this is the son of Báz Bahádur Khán, mentioned by Káli Ráe, p. 108, Gaz. IV, 69.

15. *Mubárik Khán.*

16. *Bázíd Khán*—Khánsámán.

17. *Súfi Khán*—He was originally Gauhar Singh, Thákur of Daulatábád, Parganah Sakrawah (Káli Ráe, p. 138). He held Majhúpur in that Parganah in *jágir.*

18. *Kaifi Khán.*
19. *Jamál Khán.*
20. *Kamál Khán.*
21. *Zaráfat Khán Umrá-zádah*—He established a village on the road from Farrukhábád to Kanauj, but in 1839 there was nothing left standing but a broken masonry gate.
22. *Aftáb Khán.*
23. *Tála'war Khán.*
24. *Shamsher Khán.*
25. *Bára Khán*—Masjid Wala.
26. *Mahtáb Khán.*
27. *Pahár Khán.*
28. *Shádil Khán.*
29. *Bádal Khán.*
30. *Mangal Khán.*
31. *Neknám Khán.*
32. *Muzaffar-dil Khán.*
33. *Manavvar Khán.*
34. *Kále Khán*—'Arz-begi.
35. *Muhammad Yár Khán*—Dáipuri.

Besides these, there were scores of slaves employed in various ways, some carried gold sticks, and others coloured bambus. Some were provided with caps like those of the *Kizil-básh* or the Faringis. A large number were occupied with the charge of the war material. Others were personal servants, such as *abdárs*, attendants at the bath-room, keepers of rosaries, attendants to help in the ablutions for prayers, for driving away flies, for preparing and offering *pán*, or for carrying shoes. To guard the private apartments, where the Nawáb slept, was the duty of a trusty servant, Sháh Beg Khán Bangash. The guards of the inner and the outer doorway were Shamsher Khán, Gulsher Khán, chela, and Bakhtáwar Khán, chela. The command of the fort was held by Mír Muhammad Fazl 'Ali.

Chronological Table of the reigning Nawábs of Farrukhábád, 1713—1857, *A. D.*

Number.	Name, with father's name.	Mother's name.	Date of Birth.	Date of Accession.	Date of Death.
1	Muhammad Khán, Ghazanfar Jang, son of Malak 'Ain Khán.	Not known.	Not known.	1125 H. Jan. 1713—Jan. 1714.	2nd Zi'l Ka'd, 1156. 9th Dec. 1743.
2	Ḳáim Khán, son of No. 1.	Máliya Bánu, Bibi Sáhiba.	Not known.	Zi'l Ka'd, 1156. Dec. 1743.	12th Zi'l Hajj, 1161. 23rd Nov. 1748.
3	Imám Khán, son of No. 1.	Not known.	Born at Muhamdabad, date unknown.	16th Zi'l Hajj, 1161. 27th Nov. 1748.	1163, date unknown. Nov. 1749, Nov. 1750.
4	Ahmad Khán Ghálib Jang, son of No. 1.	Not known.	Not known.	Sha'bán, 1163. June, July, 1750.	28th Rabi I, 1185. 12th July, 1771.
5	Daler Himmat Khán Muzaffar Jang, son of No. 4.	Ḳhair-un-nissa Begam.	At Farrukhabad, 1171 H. Sept. 1757—Sept. 1758.	28th Rabi I, 1185. 12th July, 1771.	8th Rabi II, 1211. 23rd Oct. 1796.
6	Imdád Hussain Khán Násir Jang, son of No. 5.	Not known.	At Farrukhabad, 1197 H. Dec. 1782—Nov. 1783.	8th Rabi II, 1211. 23rd Oct. 1796.	28th Muharram, 1228. 1st Feb. 1813.
7	Khádim Hussain Khán Shaukat Jang, son of No. 6.	Sarfaráz Mahal.	27th Ramzán, 1217. 20th March, 1803.	Muharram, 1228. 1st Feb. 1813.	29th Shawwál, 1238, at Delhi. 12th July, 1823.
8	Tajammul Hussain Khán Zafar Jang, son of No. 7.	Mumtáz Mahal.	Jamádi I, 1238. 31st Jan. 1823.	Zi'l Ka'd, 1238. 13th July, 1823.	18th Zi'l Ka'd, 1262. 9th Nov. 1846.
9	Tafazzul Hussain Khán, son of Nasrat Jang, and cousin of No. 8, grandson of No. 6.	Sultan Aliya Begam.	5th Rabi II, 1243. 26th Oct. 1827.	Dec. 1846.	Exiled to Mecca, 1859.

Descendants of Ahmad Khán Ghálib Jang, second son of Muhammad Khán.

IV.

AHMAD KHÁN,
Died 12th July, 1771.

1. Mahmúd Khán, died before July, 1771.

V.

2. DALER HIMMAT KHÁN, Muzaffar Jang, died 22nd Oct. 1796.

3. Dil Daler Khán, died 18th Jan. 1800.

4. Sitára Begam, wife of Mhd. Zamán Khán, son of Murtazza Khán.

Himmat Bahadur, m. d. of Muzaffar Jang, died 30th June, 1825.

Riyázat-un-nissa Begam, died 24th April, 1843, m. 1st Imdád Husain Khán, son of Dil Daler Khán; 2nd Himmat 'Ali Khán, younger son of same.

By Khair-un-nissa.

VI.

2. Imdád Hussain Khán, NASIR JANG, died 1st Feb. 1813.

1. Rustam 'Ali Khán.

(By Sarfaráz Mahal), d. 24th Jan. 1847.

VII.

1. Khádim Husain Khán, SHAUKAT JANG, born 20th March, 1803, died 9th July, 1823.

(By Mukhtár Mahal.)

VIII.

TAJAMMUL HUSAIN KHÁN, born 31st Jan. 1823, died 9th Nov. 1846.

2. Nasrat Jang, died 28th Feb. 1835, m. to Sultan Aliya Begam, d. of Mhd 'Ali Khán.

IX.

TAFAZZUL HUSAIN KHÁN, born 26th Oct. 1827, s. 4th Dec. 1846, exiled 1859.

(By Balkus Zamániah *alias* Bigga Begam.)

Afzul Husain Khán, born 1st Jan. 1849, died 7th Nov. 1871.

(By Musammát Shubrátin.)

Akhtar Begam, died 25th May, 1873.

Zabr Begam.

Asghar Husain Khán.

Ashraf-un-nissa Begam, d. s. p. 12th March, 1875.

3. *Kudsiya Begam*, m. to Zahúr 'Ali Khán.

Fazl Husain 'Ali Khán, d. s. p.

Sakháwat Husain Khán, hanged 15th Jan. 1858.

Turáb-un-nissa Begam, m. to Ahmad Husain Khán.

(By Nishát Mahal.)

Muzaffar Husain Khán.

'Ináyat Begam, m. to Mirza Sikandar Bakht.

Daughter. Name unknown, m. to Daler Jang, son of N. Husain 'Ali Khán, son of Amín-ud-daula.

By Umráo Begam, died 11th Nov. 1810.

3. 'Umdah Begam, wife of Himmat Bahadur.

4. Fazl-un-nissa, m. to M. 'Ali Khán, eldest son of Dil Daler Khán.

5. Najíb-un-nissa, m. to Ahmad 'Ali Khán, second son of Dil Daler Khán, died 22nd Oct. 1864.

6. Nawáb Begam, m. to Husain 'Ali Khán, son of Amín-ud-daula, died 23rd May, 1870.

7. Amir Begam, m. to Hasan 'Ali Khán, son of Amín-ud-daula, died 17th Aug. 1842.

By Achpal Khanum, died 4th June, 1843.

8. Daughter, Nádir Jahán Begam, d. s. p.

By Sáhib Begam.

9. Daughter, m. to Bu 'Ali Khán.

1. Muhammad 'Ali Khán, m. d. of Muzaffar Jang.

2. Ahmad 'Ali Khán, *alias* Banársi, died 19th Nov. 1840, m. to dr. of Muzaffar Jang.

3. Imdád Husain Khán, d. s. p. m. to dr. of Himmat Bahádur.

4. Himmat 'Ali Khán, m. to widow of his brother (No. 3.)

5. Wiláyati Begam, m. to Nawáb Násir Jang, died 13th Sept. 1824.

6. Daughter m. to Dánishmand Khán.

7. Daughter m. to Muzaffar 'Ali Khán, son of Kutb 'Ali Khán.

1. Muhammad Husain Khán, d. s. p.

2. *Ahmad Husain Khán*, born 1817.

3. Firúz Jang, born 1801, died 25th July, 1878, s. p.

4. Sultan Aliya Begam, m. to Nasrat Jang, son of Nawáb Nasir Jang, died 10th Aug. 1864.

5. Daughter, m. to Tajammul Husain Khán, son of Husain 'Ali Khán, son of Amín-ud-daula.

6. Jahán Begam, m. to Diláwar Jang, son of Husain 'Ali Khán, son of Amín-ud-daula.

Zahúr 'Ali Khán, m. to Kudsiya Begam, d. of Násir Jang.

Daughter, Balkus Zamániah alias *Bigga Begam*, m. 1st to N. Tajammul Husain Khán and 2ndly to Nawáb Tafazzul Husain Khán.

Bákir Husain Khán, born 1857.

Akbar Husain Khán, born 1841.

Husn Ará Begam.

Wájid Husain Khán.

Amjad Husain Khán.

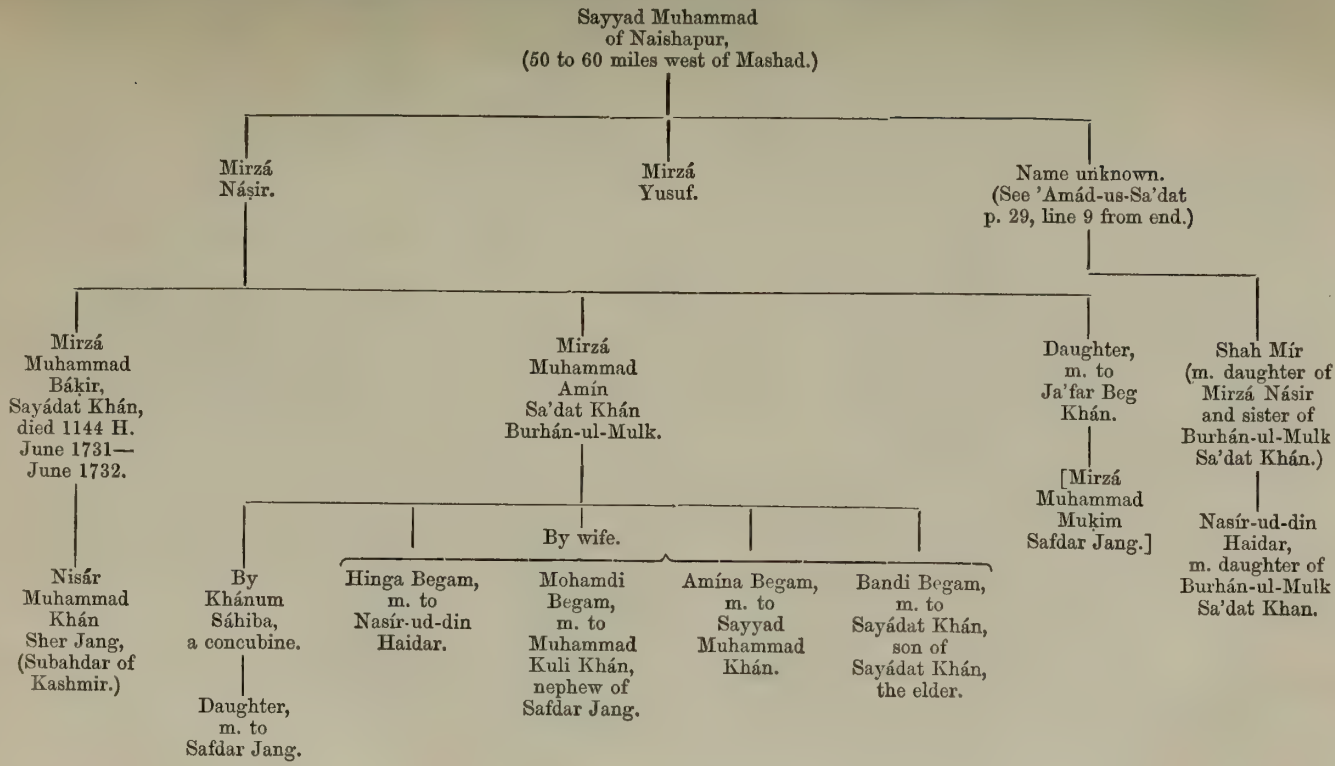
Akhtar Husain Khán.

Asghar Husain Khán.

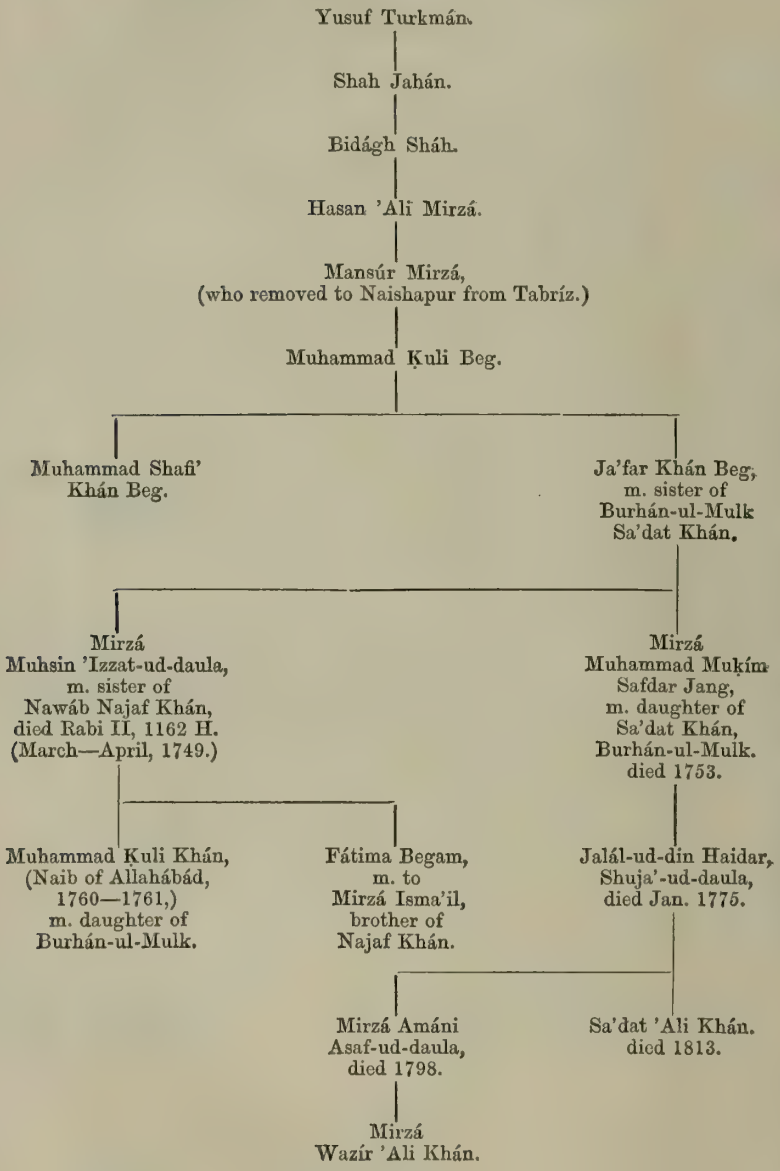
Imdád Husain Khán.

NOTE.—The names in italics are those of persons still alive in 1879.

Genealogical Table of Sa'dat Khán Burhán-ul-Mulk's family.



Genealogical Table of Safdar Jang's family.



The Sect of the Prán-náthís.—*By* F. S. Growse, *Bengal Civil Service*, M. A. Oxon., C. I. E.

The small and obscure sect of the Prán-náthís is one of the few, of whose literature Prof. Wilson, in his Essays on the Religion of the Hindus, was unable to furnish a specimen. This I am now in a position to supply, having obtained while at Mathurá a copy of one of the poems of Prán-náth himself, from the sole representative of the sect in that city. It is very curious, both from the advanced liberalism of its theological ideas and also from the uncouthness of the language, in which the construction of the sentences is purely Hindi, while the vocabulary is mainly supplied from Persian and Arabic sources. The writer, a Kshatriya by caste, lived at the beginning of the 18th century and was under the special patronage of Chhattrasál, the famous Rája of Panna in Bundelkhand, who is commonly said by the Muhammadans to have been converted to Islám, though in reality he only went as far as Prán-náth, who endeavoured to make a compromise between the two religions. His followers are sometimes called Dhámís, from *Dhám*, a name of the Supreme Spirit or Paramátma. Like the Sikhs and several of the later Hindu sects they are not idolators, so far that they do not make or reverence any image of the divinity, but if they have any temple at all, the only object of religious veneration which it contains is a copy of the works of the founder. His treatises,—which, as usual, are all in verse—are fourteen in number, none of them of very great length, and bear the following titles: 1, The book of Rás; 2, of Prakás; 3, of Shat-rit; 4, of Kalas; 5, of Sanandh; 6, of Kirantan; 7, of Khulása; 8, of Khel-bat; 9, of Prakrama Illáhi Dulhan (an allegory in which the Church or 'Bride of God' is represented as a holy city); 10, of Ságar Singár; 11, of Bare Singár; 12, of Sidhi Bhása; 13, of Márafat Ságar; 14, of Kiyámat-náma. The shortest is the last, of which I now proceed to give the text, followed by an attempt at a translation, which I am afraid is not altogether free from error, as I am not much versed in Koranic literature and may have misunderstood some of the allusions. The owner of the MS., Karak Dás by name, though professing so liberal a creed, was not a particularly enlightened follower of his master, for I found it impossible to convince him that the Ísa of the Korán, so repeatedly mentioned by Prán-náth, was really the same as the incarnate God worshipped by the English. Like most of the Bairágis and Gosains with whom I have talked, his idea was that the fiery and impetuous foreign rulers of the country were Súraj-bansis, or Descendants of the Sun, and that the sun was the only God they

recognized, as was evidenced by their keeping the Sunday holy in his honour.

But without further preface to proceed to the text of the poem. It stands as follows :—

॥ श्रीहरि ॥

बास उमत सु कहीयेा जाइ ।
उठों मेामिनेा क्यांमत आई ॥
केहेतीऊ माफक कुरांन ।
तुमारे आगे करू वयांन ॥ १ ॥
जेा कोइ घास उमत सिरदार ।
घड़े रहेा हेा ऊसियांर ॥
वसियतनामे देवे सांघ ।
अग्यारैं सदी होसी वेवाक ॥ २ ॥
वरकत दुनियां ओर कुरान ।
ओर फकीरेाकी मेहरवांन ॥
ए दरगाहसे आऐ वयांन ।
जवरांइल लेजासी मकांन ॥ ३ ॥
तिन दिन होसी अंधा धुंध ।
दार तेावाके होसी वंध ॥
कह्या होसी ओर रेवेस ।
तव कोइ किसेाका नाही घेस ॥ ४ ॥
अव कहेा जीवाकी क्या रह्या ।
निसान क्यांमतका जाहेर कह्या ॥
पातसाइ इसा वरस चालीस ।
लिघा सिपारे अठाइस ॥ ५ ॥
क्यां हिंदु क्यां मुसलमान ।
सव एकठोर ल्यांवे इमांन ॥
सेा क्या होसी उठे कुरांन ।
ऐ विचार देखों चित आंन ॥ ६ ॥
नव से नवे ऊगे वितीत ।
तव हजरत इसा आऐ इत ॥
सेा लिख्यां ग्यारे सिपारे मांहे ।

मे खिलाफ वात कऊगा नाहे ॥ ७ ॥
रूहअलां पेहेने जामे दोऐ ।
लिख्यां कुरांने सोइ होऐ ॥
ऐ लिख्यां छठे सिपारे मांहे ।
धोषेवाला जाऐ देखो ताहे ॥ ८ ॥
ऐ जो वरंस इसाकी काही ।
तिनकी तपसीर करदेउ सही ॥
दस अग्यारै वारैके तीस ।
इसा पातसाइ वरस चालीस ॥ ९ ॥
सातर वरस ओर जो रहें ।
सेा तेा पुलसरातकें कहे ॥
मोंमिन चले विजलीकी न्यांत ।
सुतकइ भी घोड़ेकी भांत ॥ १० ॥
ओर जाहेरी उपन जो रहेा ।
इस विध तिंनकों दोजक कहेा ॥
पुलसरात कही घाड़ेकेा धांर ।
गिरे कटे नही पावे पार ॥ ११ ॥
आंमियतसलूनमें कह्या ऐ ।
ऐ जाऐ देखो दिल दे ॥
ऐ जाहेर कह्या वृ्यान ।
हिरदे अंधे न सके पेहेचांन ॥ १२ ॥
दसइ इसां अग्यारै इमांम ।
वारैसदीमे फजर तमांम ॥
ऐ लिख्या वीच सिपारे आंम ।
तीसमां सिपाराकों नाम ॥ १३ ॥
आऐ इसा महंमद ओर इमांम ।
सवकोइ आऐ करेा सलांम ॥
पर ना देखें आंखों जाहेरी ।
दिल दिदेा देखो चित धरी ॥ १४ ॥
अजाजीले देख्या वजूद ।
तेा आदमकों नकि सजूद ॥
सेजदे कीऐ तिन वेहद ।
सेा सांरही ऊऐ रद ॥ १५ ॥

जो उनने देख्यां आकार ।
तोलागी लानत ऊआ धुआर ॥
तव अजाजीले माख्यां वचंन ।
के आदंम मेरा ऊआ दुसमंन ॥ १६ ॥
उनकी ओलादकी मारों राह ।
सवोके दिलपर होंउ पातसाह ॥
आदम अजाजीलसु ऐसी भइ ।
आंठमे सिपारे जाहेर कही ॥ १७ ॥
फेर तुम लेत वाहींकी अकल ।
पर क्यां करों तुम जो वाहीकी नसल ॥
तुम दजाल वाहेर छुढत ।
वहे दीलपर वेंठा लें लानत ॥ १८ ॥
उपर मांने ना होये पेहेचांन ।
ऐ तुम सुनियो दिलके कांन ॥
हमेसा आवतहे जूं ।
अव भी फेर आये हे त्यूं ॥ १९ ॥
सव पेगंवर जहूद खिलके ।
वीच देखो दीदे दिलके ॥
ओतेा आयेा हिंदुओ दरम्यांन ।
जिनकु तुम केहेते कुफरांन ॥ २० ॥
तुम छूढो अपने खिलके मांहे ।
तामे तेा साहेव आयां नाहे ॥
जिनकों केहेते कांफर जात ।
सेा सवकी करसी सिफात ॥ २१ ॥
रव ना रखे किसीका गुमांन ।
ओतेा गरीवोपर मेहेरवांन ॥
परदा लिख्या हजरतके रोये घर ।
तिनकी क्यां तुमकों नाही खवर ॥ २२ ॥
परदा लिख्या वास्ते हिंदुओ मांहे ।
पढे इसारत पावे नाहे ॥
जो देखतहे जेर जवर ।
सेा हकीकत पावें क्योंकर ॥ २३ ॥
ऐसी हिंदुओकी कहेा सिफत ।

आघर हिंदुओमें मुलकनवुत ॥
ओर आप हजरत रसालत पनाह ।
सेा तेा जह्नद फकीरोमे पातसाह ॥ २४ ॥
पांचमे सिपारे ऐह वयांन ।
न मानें सेा जाऐ देषें कुरांन ॥
ओर हिंदुवेा कितावेामे यौ कही ।
वुधकलंकी आवेगा सही ॥ २५ ॥
आऐके करसी ऐकरस ।
मसरक मगरव होसी वस ॥
कोई कहेसी दोउ क्या होसी ऐक वेर ।
तिनका भी करदेउ नवेर ॥ २६ ॥
सेा इसारत घोले निज वुध ।
विना हादी न पाईऐ सुध ॥
घोड़ेकों लिष्या कलंकीकर ।
ताको किनकों नहीं षवर ॥ २७ ॥
जोतक कहें विजया अभेंनंद ।
सव कलजुगको करसी निकंद ॥
अंजोर कहें इसा वुजरक ।
सेा आऐके करेसी हक ॥ २८ ॥
जह्नद कहे मुसा वड़ा होऐ ।
ताके हाथ कुठे सव कोऐ ॥
सारोने रसम जुदी करलैं ।
सव वुजरकी धनीकी कहीलैं ॥ २९ ॥
युं उरझे जुदे नांम धर ।
रव आलंमकी आया आघर ॥
अपनी अपनी समझे सव ।
जुदा न रह्यां कोइ अव ॥ ३० ॥
सव कितावेा दइ साध ।
जुदे नाम जुदी लिषी भांध ॥
सत असत दोउ जुदे कीऐ ।
माया ब्रंह्मा चीज्ञा ऐके दीऐ ॥ ३१ ॥
दोनेा जहांनमे थी उरझंन ।
करम काउ सरियत चलंन ॥

करी हकीकत मारफत रोसंन ।
साफ कीये आसमान घरंन ॥ ३२ ॥
ब्रंह्मांडकों भांनो घेलाय ।
सब जहांनको कियो मिलाय ॥
गुहाइ घुदाकी घुदाइ देवे ।
करे बयान ऊकंम सिर लेवे ॥ ३३ ॥
सब पूजसी साहेब सरत ।
कलांम अलां यु केहें वत ॥
ऐ लिघा तीसरे सिपारे ।
घोले अरस अजीमके द्वारे ॥ ३४ ॥
लेलतकदरके तीन तकरार ।
तीसरी फजरमे कारगुजार ॥
रूहे फिरस्ते वजूद धरे ।
लेलत कदरके माहे उतरे ॥ ३५ ॥
घेर उतरी महीने हजार ।
गिरो दोउ भइ सिरदार ॥
ऊकंम दिया साहेब इनके हाथ ।
भइ सलामती इनके साथ ॥ ३६ ॥
केती गुहाईं देउ कुरांन ।
इनाइजूलनामे ऐह बयांन ॥
तीसरी तकरारको भइ फजर ।
ग्यारै सदी मे देघोगे नजर ॥ ३७ ॥
ओर पेहेले सिपारेमें जो लिख्यां ।
सेा तुमेा क्या नाही देख्यां ॥
साहेदी कुंनकी देवे जोऐ ।
घास उमतका कहीऐ सोऐ ॥ ३८ ॥
अब जो कोइ होवे घांस उमत ।
देउ गुहाइ हो सावत ॥
उडाऐ गफलत हीऐ सावधांन ।
छोड़ो पढोका गुमान ॥ ३९ ॥
हकलआकीन ओर सुनी जोए ।
पेहले इमांन लरावेगा सोए ॥
पीछे जाहेर होसी साहेब ।

तव तेा इमांन ल्यावेगे सव ॥ ४० ॥
मिल दोजक जाहेंर भइ ।
नफा कीसीका न देवे कोई ॥
ले हिरदे हादीके पाये ।
क्त्रसाल यु कहे वजाये ॥ ४१ ॥
प्र १ ॥ चो ४१ ॥ क्यामतनामाको प्रकन्य तमांम ॥ * ॥

Translation.

THE DAY OF JUDGMENT.

Go tell the chosen people; Arise, ye faithful, the day of judgment is at hand. I speak according to the Kurán and make my declaration before you. All ye heads of the chosen people, stand up and attend. The Testament (*Wasíyat-nama*)* gives evidence: Eleven centuries shall be completed after the blessing of the world by the Kurán and by him who was merciful to the poor. A voice shall come from the tabernacle and Gabriel† shall take them to the appointed place. For three days there shall be gloom and confusion and the door of repentance shall be closed. And what? shall there be any other way‡? Nay, no one shall be able to befriend his neighbour.§

Say now what shall be the duration of this life, and what the clear signs of the coming of the last day. Christ shall reign for forty years, as is written in the 28th sípára. Hindus and Musalmáns shall both alike bring their creed to the same point. And what shall come about, when the Kurán has thus been taken away? this is a matter, which I would have you now attentively consider.

When 990 years are past, then the Lord Christ will come. This is written in the 11th sípára: I will not quote a word wrongly.|| The Spirit of God (*i. e.*, Christ) shall be clothed in vesture of two different kinds; so it is stated in the Kurán. This is in the 6th sípára; whoever doubts me may see it there for himself. These now are the years of Christ, as I am going to state in detail. Take ten, eleven and twelve thirty times (that is

* *Wasíyat-náma* is, I believe, a general name including both the Kurán and the Hadís, which together make up the Muhammadan rule of faith; but I have not been able to trace the particular tradition, to which reference is here made as specifying the exact number of years that are to elapse before Christ's second coming.

† Gabriel is accounted God's ordinary messenger, but here I should rather have looked for Isráfil, whose duty it will be to sound the trumpet at the last day.

‡ *Reves* may possibly stand for *ravish*.

§ *Khes* is for *khwesh*, a kinsman.

|| In spite of this emphatic assertion, the quotation would appear to be incorrect, for the 11th sipára contains no such prophecy.

to say, 10 + 11 + 12 × 30 = 990). Then Christ shall reign 40 years. The other 70 years that remain (after 990 + 40, to make up 1100) are for the bridge Sírát. The saints will cross it like a flash of lightning; the pious with the speed of a horse; but as for the merely nominal believers who remain, for them there are 10 kinds of hell;* the bridge Sírát is like the edge of a sword, they fall or they get cut in pieces, none cross over. This is stated in the *A'miyat-salún;* go and look at it carefully. The statement is clear, but your heart is too blind to see it. Christ stands for 10,† the Imám for 11, and in the 12th century there shall be the perfect day-break. This is written in the *A'm* sípára, which is the 30th.

When Christ, Muhammad and the Imám are come, every one will come and bow before them. But you should see not with the eyes of the body, but after reflection with the eyes of the soul. Azázíl saw in person, but would not bow to Adam. Though he had done homage times without number, it all went for nothing. When they saw his pride,‡ the curse was pronounced and he became an outcast. Then Azázíl asked a boon: "Adam has become my enemy. I will pervert the ways of his descendants and reign in the hearts of them all." Thus it was between Adam and Azázíl, as is clearly stated in the 8th sípára. You take after him in sense, but what can you do, since you are his offspring. You look for Dajjál§ outside, but he sits at your heart, according to the curse.

You have not understood the meaning of the above: listen to me now with the ears of the spirit. In like manner as He has always come, so will he come again. All the Prophets have been of Jewish race—look through them with the eyes of the soul—that is, they have sprung from the midst of Hindus, whom you call Káfirs. Search now among your own people; the Lord has never been born among them. The races, whom you call heathen, will all be sanctified through him. The Lord thinks scorn of no man, but is compassionate to all who are humble. A veil is said to be over the Lord's face. What, do you not know this? By the veil is meant 'among Hindus'; mere reading does not convey the hidden intention; if you look only to the letter, how can you grasp the spirit? Thus is declared the glory of the Hindus, that the last of the Prophets shall be of them. And the Lord Christ, that great Prophet, was the King of the poor Jews. This is stated in the 5th sípára; if you do not believe me, go and examine the Kurán yourself. It is also stated in the Hindu books that Budh Kalanki will assuredly come. When he has come, he will make all alike; east and

* This is the Hindu computation; the Muhammadans reckon only seven hells.

† This is intended to explain the curious calculation given above, ten, eleven and twelve multiplied by thirty.

‡ *A'kár* here would seem to stand for *ahamkár*.

§ *Dajjál*, here the spirit of evil generally, is properly the name of Antichrist.

west will both be under him. Some one will say, 'Will both be at once?' This too I will clear up, explaining the intention to the best of my ability; without a guide you would not get at the truth. Kalanki, it is said, will be on a horse—this every one knows—and astrologers say that Vijayábhinand will make an end of the Kali Yug. Now the Gospel says that Christ is the head of all, and that He will come and do justice. The Jews say, that Moses is the greatest, and that all will be saved through him. All follow different customs and proclaim the greatness of their own master. Thus idly quarrelling they fix upon different names; but the end of all is the same, the Supreme God. Each understands only his own language, but there is no real difference at bottom. All the Scriptures bear witness that there are different names in different languages; but truth and untruth are the two incompatibles, and Maya and Brahm have to be distinguished from one another. In both worlds there was confusion; some walking by the law of Hindu, others by the law of Muhammadan ceremonial. But knowledge has revealed the truth and made clear both heaven and earth: as the sun has made manifest* all creation and harmonized the whole world: so the power of God bears witness to God; he speaks and all obey. All who perform acts of religious worship, do them to the Lord; the word of the Most High has declared it so. It is written in the third sípára that he opened the gates of the highest heaven.

The Lailat-ul-Kadr (or night of power) has three contentions: on the third dawn the judgment will commence. The spirits and angels will appear in person, for it was on that night that they descended:† the blessings of a thousand months descended also. The chiefs will be formed into two companies; God will give them his orders and through them there shall be salvation. This is abundantly attested by the Kurán; the statement is in the *Iná-anzal-ná* Chapter. After the third contention will be the dawn; in the eleventh century it will be seen.

And what is written in the first sípára? you must have seen that. They who accept the text *kun* are to be called true believers. Now if any one is a true believer, let him bear witness and prove the fact. Put off sloth; be vigilant; discard all pride of learning.‡ He who hears with

* For *kheláya* I propose to read *khuláya;* but even so, the meaning elicited is not very satisfactory.

† The allusions are to the chapter of the Kurán called the Súrat-ul-Kadr, which is as follows: "Verily we have caused the Kurán to descend on the night of power. And who shall teach thee what the night of power is? The night of power excelleth a thousand months; therein descend the angels and the spirit by permission of their Lord in every matter; and all is peace till the breaking of the morn."

‡ The text *kun* is the parallel of the Mosaic phrase, "And God said 'Let there be light,' and there was light."

perfect faith* will be the first to believe. Afterwards when the Lord has been revealed, *all* will believe. Heaven and hell will be disclosed, and none will be able to profit another. Lay your soul at your master's feet; this is what Chhattrasál tells you.

* *Hakk-ul-Yakín*, 'perfect faith,' is faith without seeing, which alone is meritorious; for all who see must perforce believe.

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Rough Notes on the Distribution of the Afghan Tribes about Kandahar.—By* Lieut. R. C. Temple, *1st Goorkhas, (with two maps).*

I was employed in foraging in advance of General Stewart's Division during the march back from Kelát-i-Ghilzai to Kandahar, 1st to 10th February 1879,—afterwards in taking a convoy of camels to Col. Patterson's reconnoitring expedition down the Arghisán valley, 13th to 23rd February, and these rough notes are the result of such information as I had time to pick up regarding the population of the villages I passed *en route*. At the foot of the Maps accompanying these notes, I have given a list of the villages inhabited by the various tribes of Afghans found in those parts so that the reader can see for himself how they are distributed; but the following additional notes may prove useful.

Nearly all the Afghans living in the Kandahar district are Duránis of the Pópalzai and Bárakzai sections. Of these the Pópalzais mainly occupy the valley of the Tarnak as far as Shahr-i-Saffa and the Bárakzais the whole valley of the Arghisán to Márúf. Beyond Shahr-i-Saffa (now merely a ruined mound), as far as Jaldak in the Tarnak valley, the Alikózai section of the Duránis is found; the Ghilzais not being seen till the neighbourhood of Kelát-i-Ghilzai is reached.

* The local pronunciation of this word is as nearly as possible Kandhár, the second syllable which probably really exists between the *d* and the *h* being so short as to be scarcely audible. [It is commonly identified with the Sanskrit *Gandhára* (गन्धार); Ed.]

As may be supposed, a large city like Kandahar has attracted Afghans of all kinds of tribes to itself, and in its neighbourhood is found one Kákar village, Malang, but it is a small one. The Mómands again have a large village which has lately changed its site, as the name, Koneh Mómand, of some neighbouring ruins testifies.

There is a large colony of Ghilzais* about 6 miles from Kandahar owning some eight villages about Taraki Kulácha† which is, as its name signifies, a hamlet of the Taraki section of the Ghilzais. Sayads are found scattered about in this as in other parts of Afghanistan. The hamlet of Sayad Mohammad Sháh is, or rather was, the residence of the late Wazír of the Amír in these parts. And lastly colonies of one section are found scattered here and there in the country of another. The villages of Tang (Pópalzai), Khaugáni Káréz (Khúgiánis), Mákián (Mákus), in the midst of the Bárakzai villages of the Arghisán valley, are cases in point.

With these exceptions the population of both the Tarnak and Arghisán valleys respectively, as far as Kelát-i-Ghilzai and Márúf, are Duráni Paṭháns of the Pópalzai, Alikózai and Bárakzai sections. Near Kandahar villages of mixed populations are common, such as Deh-i-Khója, which I have set down as being Pópalzai, and Shahzáda which I have called Ghilzai, meaning of course that the bulk of the population is Pópalzai and Ghilzai respectively in each, but further up the valleys, mixed villages are not often met with.

Numerous subdivisions or septs of the main sections of Duránis are found in the above villages. Of the Pópalzais I was told the following lived about the Kandahar district :—

1. Sadozais, (in Pungi).
2. Bámézais.
3. Nóazais, (in Kadanei valley towards the Khojak Pass).
4. Madozais.
5. Marsingzais.
6. Khánzais.
7. Aiabzais.

Of the Alikózais, the following :

1. Sandarzais, (in Arghisán Valley).
2. Karazais.
3. Nausazais.

Of the Bárakzais, the following :

1. Mohammadzais.
2. Sulimánzais.

* This word is usually pronounced locally Ghilzai, but sometimes Aghalzai.

† *Kala* means village and *Kulácha* little village or hamlet.

3. Khunsézais.
4. Baianzais.

Of Panjpao Duránis:

1. Alizais.
2. Núrzais.
3. Khúgiánis.*
4. Mákus.
5. Ságzais.

The above subdivisions are not all to be found in the official list of the subdivisions of the Afghan tribes, in which the Sadozai and Bámézai sections of the Pópalzais are the only ones given, while no subdivisions are given in it of the great Bárakzai section, and the three subdivisions above given of the Alikózai section differ in name from the three given in the official list. The acknowledged imperfection of the official list and the great number of subdivisions, into which every tribe or even section of a tribe of Afghans is split up, would easily account for my names varying from those found in it. I asked a great number of questions regarding these subdivisions, and as far as I know, the above information is correct.

One curious point turned up during my interrogations. Several of those I questioned would not acknowledge the Achakzais as Duránis, though of course there can be no doubt as to their being so, while they admitted the Kákozai and Achalzai subdivisions of the Achakzais into the Bárakzai section. I saw no Achakzais about Kandahar, though the Khójak Pass is held entirely by them.† The Ságzais found in the Arghisán valley are not mentioned in the official list of the Panjpao Duránis. But I was assured, they were Duránis and neither Pópalzais or Bárakzais, but of a lower descent, *i. e.*, they were Panjpaos. If not a section of the Panjpaos, they are probably a subdivision of one of the sections.‡

As regards the pronunciation of the names, the termination zai is sometimes pronounced almost as zoï (two syllables) especially in the Arghisán

* This name is pronounced Khaugán in the Arghisán valley and their village called Khaugáni Káréz (the name Káréz, being given a village, does not now argue the existence of a Káréz in its neighbourhood, it is merely an affix), similarly the Mákus are called Mákiáns and their village Mákián. The term Panjpao is usually also pronounced Panjpáe about Kandahar.

† The Achakzais are said to have been originally part of the Bárakzais who were separated from them for political reasons. Mír Aslam Khán the Sirdár or chief of the Achakzais calls himself Abdal? Abdáli = old name for Duráni.

‡ Duránis are divided into Zírak Duránis with 4 sections, Pópalzais, Alikózais, Bárakzais, Achakzais, and into Panjpao Duránis with 5 sections, Núrzais, Alizais, Ishakzais, Khúgiánis, Mákus. The Zírak descent is considered by far the most honorable.

valley. The name I have given as Pungi has a very peculiar pronunciation like Pungaí, and a similar sound is heard in Lándé Káréz, as if it were Lándaí Káréz. The sound Néjoi is also peculiar in the o which is softened almost to the German ö, as if it were Nejöi. Khél-i-Akhund is also called Khél-i-Akhwand. Deh-i-Náo is often called Náo-i-Deh or Navvi Deh (= new town). Beyond the extremely guttural sound of the Pushtu consonants, heard in these words, there is little to be noticed but the following. Saifu-l-lah is pronounced often as Zaipullah, Zanghír Khán as Tanghír Khán, Khunsézai as Khunchazai.*

There is considerable difficulty in discovering the name of a village† for the following reasons:—A village may be called by six different names by guides; those thoroughly acquainted with the locality would recognise it by any one, others less well acquainted will only know it by some of them. Thus a village may be called (1) after the district or tract of land in which it is situated. Takht-i-pul is such a name, Mel Manda is another; villages ten miles apart are all called Takht-i-pul or Mel Manda, simply because they are situated in the tracts so named. (2) It may be called after the section of the tribe which inhabits it, thus Bárakzai; (3) after the subdivision, thus Khunsézai or Muhammadzai; (4) after its late owner if recently dead; (5) after its present owner; thus Kala-i-Núr-uddín Khán merely means Núr-uddín Khán's village and the owner's is usually the proper name of a village; (6) after its own name. To give an example the village, marked Amín Kala on map No. 1, was named to me as Bárakzai, Muhammadzai, Amín Kala and Latíf Khán. Latíf Khán is its present owner, Amín Khán was the late owner, Muhammadzai is the subdivision and Bárakzai the section of the tribe inhabiting it. It will be easily seen that the more general of these terms are known at a distance, while the more specific ones only in the immediate neighbourhood of a village—and this is what one has to look out for in asking the way on the march, especially as a guide or passing villager thinks he has done quite enough, when he has given any one of the names by which a village may be designated. Complicated as this system of nomenclature looks, it is natural enough in a country where the individual occupies such an important part in men's minds, and nationality so little. It is not difficult to deal with in practice, after a slight knowledge of the country is ac-

* Further back in the Pishin the same peculiarities are observable. Thus Arambi is pronounced almost as Arambae. Mt. Chapar is called Mt. Sapar and the Zhób valley the Jób valley. Awalía or Aulía is the name of a malik in the Pishin.

† Villages are also constantly changing their sites, which renders a survey, which is correct for a certain year, very far from being so afterwards.

No. 1.

SKETCH MAP

Showing Villages about

KANDAHAR

From Observations with a Prismatic Compass, during February 1879: in Tarnak Valley during Advanced Foraging Expedition, 1st Division, Kelat-i-Ghilzai to Kandahar; in Arghisan Valley during Reconnoitring Expedition.



Distribution of the Population.—I.

Pópalzais (Duránis). Madozais, Marsingzais are Septs of this Section. In Pungi live the Sadozai Sept.

- Morgán Kehchar.
- Madozai.
- Marsingzai.
- Robát.
- Kala-i-Akhund.
- Kala-i-Amír.
- Deh-i-Mánja.
- Néjoi.
- Deh-i-Náo.
- Abd-ul-Waháb.
- Shakarganj.
- Kala-i-Azim (Tarnak V.)
- Khushab.
- Deh-i-Khoja.
- Pungi.
- Gulistán.

Bárakzais (Duránis). In Sháh Muhammad and Saif-ul-lah live the Khusézai Sept. Nearly all the remaining Bárakzai Villages belong to the Muhammadzai Sept.

- Abd-ur-Rahmán Khán.
- Deh-i-Dai.
- Naib Sultán.
- Kala-i-Saif-ul-lah.
- Kala-i-Rahmán.
- Kala-i-Azim (Arghisan V.)
- Abu.
- Pír Dád.
- Atá Ahmad Khán.
- Madazám Khán.
- Mir Ahmad Khán.
- Pír Muhammand Khán.
- Abd-ul-lah Khán.
- Amín Kala.
- Shah Muhammad.
- Saif-ul-lah.
- Zanghir Khán.
- Muhammad Khán.
- Nizám-ud-Dín Khán.
- Baianzai.
- Kala-i-Nur-ud-Dín Khán.

- Deh-i-Háji, Alizais.
- Kálak Dád, Núrzais.
- Mákián, Mákus. — Panjpáo. Duránis.
- Khaugáni Káréz, Khugiánis.
- Ságzai, Ságzals.
- Taraki Kulácha.
- Káréz Aino.
- Múlla Paizo.
- Shahzáda. — Ghilzais.
- Bóstán.
- Mulla Paindé.
- Háji Aziz.
- Mund Hissar.
- Malang. — Kákars.
- Momand. — Momands.
- Syad Muhammand.
- Landé Káréz. — Syads.
- Kázi Káréz.
- Kulacha-i-Syad Muhammad Shah.

No. 2.

SKETCH MAP

Showing Villages in Tarnak and Arghisan Valley.

(In Continuation of No. I.)



Distribution of the Population.

Popalzais (Duránis) Khánizais and Bámezais are Septs of this Section.

- Khél-i-Akhund.
- Kala-i-Amír.
- Khánizai.
- Zakariah.
- Bámézai.
- Tang.

Alikózais (Duránis) Karazais, Nausazais and Sandarzais Septs of this Section.

- Karazai.
- Bakhtiár.
- Sardésu.
- Kala-i-Sher Ali.
- Sokhta.
- Sunjat.
- Habíbullah.
- Jalaugír.
- Ayáz.
- Ismáil Khán.
- Nausazai.
- Kákul.
- Lálok.
- Sher Muhammad
- Juldak.
- Sandarzai.

Barakzais (Duránis) Baianzais are a Sept of this Section. Khunsézais live in Saifullah, Muhammadzais in the remainder.

- Saifu-l-lah.
- Amín Kala.
- Baianzai.
- Mír Alam Khán.
- Sartíp Núr Muhammad.

quired, but it accounts for the great apparent discrepancy in names and distances met with on maps and in routes.*

I may here remark on the names Khojak Pass—Roghâni Range—Khója Amrán Range, found on the maps as representing the celebrated hills dividing the Pishin† and Kadanei valleys. Locally the names Khójak, Roghâni, Khója Amrán are unknown as designating any set or range of hills; in fact neither the Achakzais nor the inhabitants of the Pishin (Tor Taríns) have any general name for the hills; but every peak, spring, stream seems to have a special local name, often but little known, as might be expected among such a people as the Afghans. Khójak is the name of the Khójak river, the bed of which forms the Khójak Pass:‡ similarly Roghâni is the name of the Pass so called, not of any hill, while Khója (or more properly Khwája) Amrán is the name of a peak in the Gwája Pass; on its summit is a cemetery, so it is possible that Khwája Amrán was a Pír or saint when alive. Gaz (not Dahagaz as the maps have it) is the name apparently of the line of hills separating the Shálkót (Quetta) and Pishin valleys through which the Gazarband Pass runs, but this is the only line of hills which has a general name as far as I can understand. Chiltan (or Chiltán) to the S. of Quetta, Takatú, Zarghún, Píl, Kand, names along a line of hills running successively northwards from Quetta and visible from the Pishin valley, are names rather of snowy peaks than of ranges. Chapar again is the name of a high rounded snowy peak, behind these again, but visible from Pishin.

* The village of Marsingzai is also frequently called Maisingí; and Tájáo is the proper name of the village usually called Zanghír Khán. Ságzai is also frequently named Tórakhar, pronounced also Tóragar (the black rock), from the hill in the neighbourhood where there is a convenient place for a camp.

† Pronounced Pishin in the neighbourhood, not Peshín as it is usually spelt.

‡ Máchka is the name of a stream joining the left bank of the Khójak about 6 miles from the summit of the Pass, and Shal of the place marked "Camping Ground" in the maps about 4 miles up the Pass from Kala Abdullah Khán. There is a perpetual spring of water there.

Hamír Rásá, or a History of Hamír, prince of Ranthambor. Translated from the Hindi.—By Brajanátha Bandyopádhyáya, *Jeypore.*

Author's Preface.

In the beautiful town of Nímráná there reigns a Chohán prince, named Chandrabhan, a descendant of the celebrated Prithvíráj. He is religion itself. His subjects, consisting of four castes, live in peace and plenty. He is called the emperor of Rát. Born in a clan illustrious for noble and heroic actions, he has inherited most of the virtues of his glorious ancestors, and his mind is naturally inflamed by the passion of hearing their exploits. Once, seated on the throne in regal state, he ordered me to compose for him an account of the battles fought by Hamír Chohán with Alá-uddín, Emperor of Delhi. "Tell me at length," said the Mahárájá, "the battles which were fought between Hamír and Alá-uddín, and the causes which led to them."

I am by birth a Gauṛ Bráhmaṇ, descended from the Ṛishi Áttreya. I was born at Bíjáwar, in the province of Rát. My name is Jodhráj, and that of my father Bálakṛishṇa. I am a paṇḍit and poet. My knowledge of astronomy and astrology has raised me to the highest rank in the royal court. Rájá Chandrabhan is very kind to me. He has given me houses, horses, clothes, wealth and property, so that all my wants are relieved and desires satisfied. In obedience to his orders I undertake to write in poetry the details of the history of Hamír.

Chapter I.

[The work opens with a brief resumé of the Pauraṇic cosmogony; and then gives the following account of the origin of the Agnikula Kshatriyas, to which caste the hero of the work belonged.]

Paraṣurám slaughtered the Kshatriyas twenty-one times in order to revenge himself on Sahasra Arjun, the murderer of his father. He filled a tank with their blood and offered it to his dead father, whose thirst was thereby satisfied. None escaped from his scimitar, but those who were very humble, who held each a stalk of grass by the teeth as token of submission, and who took to the guise of women. Boys, eunuchs, old men, and those who put ten fingers within their mouths, those who left their swords and fled away, and those who fell down at his feet, were also spared. He continued carrying on the work of destruction until his ancestors appeared, blessed him and told him to put a stop to further massacre and bloodshed. He then ceased and went to a jungle to pass his days there in penance.

For a time there were no Kshatriyas, none able to protect the land and the holy Śástras. Rákshasas increased in number, the Vedas were trampled under foot, and every form of Hinduism was forgotten. These Rákshasas began to oppress the people in various ways, so that there were no longer castes and orders in society. Such being the case, all the holy sages were filled with anxiety. They consulted each other and came in a body on Ábu where, in a cave, lived the mighty Paraśurám. When all the gods, Nágas (serpents) and men had assembled, they devised a plan to extirpate the Rákshasas. Brahmá and Vaśishṭha met. The latter erected an altar. A pit was dug in the midst of it, and fire kindled. All other holy sages came to the spot. They contemplated on Śiva, who made his appearance. His hair was matted, he wore a crown and bore ashes rubbed on his body. The Ganges flowed and murmured over his head, serpents hissed, and ghosts played and danced around him. The sages stood up and prayed. "Stay here with us, gracious Śiva, otherwise we shall never be able to complete our sacrifice." The rites of sacrifice were begun, the Vedic mantras were chanted, 108 kinds of offerings and waters from all the sacred rivers were brought. All things were ready. No sooner a column of smoke rose in the air and the chanting of Vedic hymns was wafted, than all the Rákshasas came, in order to pollute the sacrifice. They made various endeavours towards that end. Now it blew a storm; anon it rained in torrents Blood, flesh, grass and other rubbish were thrown upon the altar. Then all the holy sages—Dvaipáyana, Dálbhya, Jaimini, Lomaharshan, Bhrighu, Pulaha, Áttreya, Gautama, Garga, Sáṇḍilya, Bharadváj, Bálakhilya, Márkaṇḍeya, Ushaṇá, Kaushika, Basant, Mudgala, Uddáláka and Mátanga, with Vaśishṭha at their head, complained to Brahmá and Śiva. Again, an altar was erected, a *kund* dug and purified, fire kindled, and every rite of sacrifice begun. Hymns of the Sáma Veda were sung. All of a sudden sprang four warriors with swords in hand from the *kund*. These fought with the Rákshasas and defeated them. All the sages went to the north-western corner of the Arbad Gir (Ábu) and came to the cave where the great Paraśu dwelt. They asked his benediction on the newly-created heroes. He granted the request. The goddess Śaktí was invoked. She appeared and blessed them. Their energy was like fire, their eyes red like the rising sun shot forth courage, their foreheads shone like flames, and their crowns sparkled. They frowned, and the devils shook with fear.

One of these Agnikulas (fire-born) was named Chohán. He had four arms, all equipped with the weapons sword, bow, dagger and knife. He joined his hands and said to Brahmá: "What is the purpose of my creation, lord?" "Hear, my son," replied Brahmá, "do what Bhrighu tells you." Bhrighu ordered him to kill all the Rákshasas. "Śaktí is with you to defend

you," said he. "She has ten hands well armed with weapons of attack and defence; she rides on a lion and wears a necklace of human heads. All the holy sages worship her; so do not fear, brave child, but fight with a heart of steel, braving all dangers for the cause of your religion."

The Rákshasas were cut to pieces. Their blood ran in torrents. Those who escaped fled to the infernal regions. In times of peril, Ṣaktí protected the Hindu champion from all dangers. Every time he fell at her feet, his strength and energy were doubled, and he rushed at the ranks of the devils and put them to the sword. The goddess is called *Aṣápúrí*, because she fulfilled the hope of the holy sages, and by that name is worshipped by the Chohán to this day.

After many generations, Rájá Jeyat Chohán was born in the village of Barbágáo. He was learned, benevolent, generous, wise and handsome. Rájpút heroes of the thirty-six clans always waited on him. Minstrels sang of his glory and heroism. His energy increased like the heat of the morning sun, and he was feared by his enemies both by day and night. He was very kind to the poor, he relieved their wants, the moment he heard their complaints.

Once the Ráo was out in a forest on a hunting-excursion, accompanied by all the skilful huntsmen in his territories. He saw a white boar and pursued it very closely. It ran into a dense jungle, which was full of windings. He was separated from his train. The figure of an ascetic met his view. Ṛishi Padam, the best of all sages, sat there, engaged in deep contemplation. The prince left off chasing after the game. He fell prostrate before the sage, joined his hands and thus began to pray: "I am very fortunate, that I am able to see thee. My sins were forgiven me the moment I looked on thy body. Protect me, bless me, O thou merciful one, have mercy on me. I am ever the object of thy care, O thou, who art an ocean of virtues, I bow down before thee. Thou art the possessor of unfading beauty, all-wise and all-powerful. The great name of Ráma is always on thy lips. All the ages dwell in thee, and thou givest the three worlds what they wish for. Thy austere penance has made thee almost equal to Vishṇu, Ṣiva and Gaṇeṣa. Place thy hand on my head, O lord! and bless me." The sage was greatly pleased with the Ráo's prayers. He blessed him. "Build a fort yonder on the hill, my son," said he, "dwell there and worship Ṣiva."

When Rájá Jeyat returned to his capital, he called a council of his ministers and vassals and consulted all the learned astrologers of his court. A lucky hour was fixed to lay the foundation-stone of a town and that of its fort. The time was 7.30 in the morning of Saturday, the third of the new moon, the day of the feast of *Akshayaya Ṭṛitíyá*, the moon being on the

sign *Mithuna*, in the month of Vaiṣákha (April). Offerings were made to Ṣiva and Gaṇeṣa, and large sums of money distributed among the Bráhmaṇs.

The newly built town of the Ráo was full of temples and squares. It resembled Amarávati, the city of Indra. The temples were very beautiful, lofty, and decorated with screens of lattice-work. Expanding flags, glittering *kalaṣas*, lofty gateways, were abundant in every place. The front doors of shops, facing the street, were ornamented, and the walls adorned with pictures. Handsome women, rivalling Rati, the wife of Kámadeva (Cupid), gave beauty to the scene. The gates of houses, the seats on either side of them, and the balconies were very exquisitely made. Perfumes of various kinds filled the air with fragrance. All the four castes and *Á́ṣrams* lived there in happiness, each following its own profession. The people were all of a forgiving nature, kind, charitable and hospitable to strangers. The splendid town was named Ranthambor.

All the Bhíls, inhabiting the mountain fastnesses, readily acknowledged the power of the Ráo and recognised in him their sovereign. It is said that Mahádeva, being pleased with his devotion, appeared before him and blessed him, saying, "Reign in glory, my son ; reign as long as your virtues enable you to do so."

A very curious story is told of the erection of the fort. The wall of the portico fell down as often as it was raised. The Rájá was struck with wonder and was extremely anxious to find out the cause of this mysterious occurrence. At last, finding all resources fail, he summoned up all his courage and said—"Let me die, for my death alone can give stability to the wall." He seated himself at the foundation, ready to carry out his desperate resolution, when Rávaṇa and Básava, two warlike and loyal Bhíls, exclaimed—"Ráo Jeyat, the fort is ours, although you have a nominal title to it. You are but our guest. The fort is emphatically ours. It behoves you, therefore, to cut off our heads and raise the wall upon them." Ravaṇa said, "Only look after my son Bhoj." The brave Bhíls were beheaded, their heads placed as foundation-stones, and the wall built thereon became as firm and lasting as a rock. The fort is said to have all the advantages of position and to be impregnable to an enemy. It stands to this day in all its majesty, a monument of the martial tact and skill of the ancient Rájpúts.

The austere penances of the sage Padam greatly frightened Indra. His throne shook. In fear he sent Cupid to allure the sage. The god of love with his seductive train appeared before the saint. Spring bent his bow, and shot arrows drawn from his quiver. The apsaras danced, and Kinnaras sang. Their captivating strains charmed not only men, but even the gods. The forest became full of flowers and bees, cuckoos and peacocks. The

sweet note of the cuckoo caught every heart and inflamed it with ardent lust. But the soul of the sage could not be moved. The beauties of spring had no effect upon it: it remained as firm as a rock.

Spring failed. Cupid gave orders to summer. The earth became hot with the sun's vertical rays. The Ṛishi opened his eyes. He saw, very near to him, a shady banian tree with spreading branches, a beautiful pond full to the brim, a very handsome building wherein sat a troop of heavenly maidens singing soul-enchanting airs and revelling as they liked, with a cool, soft breeze blowing and scarfs flying round about their persons. He saw Rambhá and Urvaṣí braiding their hair before a mirror and rubbing their bodies with musk, camphor, sandal-wood paste, saffron and other perfumes. The daughters of Gandharvas and Kinnaras, dressed exquisitely, were entertaining one another by placing garlands of flowers, each on the other's neck, smiling and darting quick glances on the sage. But the Ṛishi closed his eyes and became lost in contemplation.

Summer failed. Then the rainy season came and bowed before Cupid. Dark, heavy clouds hung on the air. It became intensely dark. Cold winds began to blow from all quarters. The flashes of lightning were seen on the sky, thunders roared, the gates of heaven were opened, and rain poured forth in torrents. The *kalápin* (thrush) and the *papiyá* filled the air with their melody. The nymphs of Cupid sang sweetly as they waved to and fro in the swing. Now it rained fast, and they in a hurry began to run hither and thither before the sage. A gust of wind blew. It removed their fine, loose clothes, displaying their persons of roseate hue which none can see without falling entangled in the snare of Cupid. The bees hummed, the frogs croaked, and heavenly nymphs rivalled one another in the art of fascination. Divested of their clothing they danced, they sang, they played at balls, they made garlands of flowers and threw them at each other; they cast sidelong glances which, like arrows, pierced the heart of gods; they laughed, and their gentle laughter thrilled in every pulse and brought on a fever of love. Yet the soul of Padam could not be moved.

The rainy season failed. Cupid said, "Let autumn go and allure the sage from his austere penance." The autumnal clouds were seen hovering on the sky. All the rivers and tanks, being full of transparent water, reflected the rays of the sun, bearing on their broad bosoms lotuses of different colours. The pretty kingfisher, the humming bee, the ducks and the reflections of the moon were dancing round about the white lotuses. The earth wore a bright dress and looked like a matron in white. The jassamine was in blossom. The celestial nymphs sang, taking in their hands the bows and arrows of Cupid. The soft strains of their songs, wafted by a gentle breeze, wounded the hearts of those whose lovers were not at home.

The lamp of the sky shone, and the coolness of night enraptured the heavenly beings of both sexes. In all the charms of uncovered beauty, each of the bewitching nymphs began to take a bath in a pond close to the sage. They, in a body, looked at him, and their looks were full of lust. Now they danced, now they swam, now they glanced with pride on their own persons. Tufts of hair fell on their cheeks; they seemed as if a number of black serpents had assembled to suck nectar from their cheeks. Yet the soul of the sage could not be moved: its firmness remained unshaken.

Then came with fury the severe winter. Snow began to fall and all creatures to shudder. The nymphs were in the arms of their lovers, and each pair looked as if made of one piece. The dashing Urvaṣí came to the sage and asked him for shelter; but her charms availed her nothing, and thus was winter defeated.

Then came with pride the season of dew and bowed before Cupid. The vegetable kingdom wore a green dress. The mango and kadamba looked merry in full blossom. Three kinds of breezes began to blow. The creeping plants eagerly embraced trees. The earth became covered with rich verdure. All was life. The branches of trees hung down laden with fruits and flowers. The bees began to hum all around them, awakening the softer passions in the hearts of all creatures. The nymphs laid aside their modesty and began to beat drums, sing and dance. Saffron and red powder *(abir)* they threw at one another. Intoxicated with lust the nymphs began to celebrate the great festival of *Holi*. [Here follows a glowing description of the festival as celebrated by the nymphs of heaven, which we omit.] The queen of the heavenly nymphs, Urvaṣí, ran away in feigned fear at the fall of a ball on one of her cheeks. She passed by the sage smiling gently, singing and dancing. Now Cupid applied the arrow named *unmád* to his bow. The bees began to hum, and three kinds of breezes blew. The bolt was shot at the breast of the father of all Ṛishis. His eyes opened. Another arrow was shot; his heart wandered. He saw the nymph and became greatly delighted. She ran to throw a handful of the red powder and a ball at him. He rose, he played, he embraced her. She captivated him and his reason gave way to passion. She darted quick glances at him, and they like arrows struck his heart. She pressed sweet kisses on his cheeks, and he felt a fever of love. Thus succeeded the season of dew in alluring the sage from his austere penance. The latter lost his reason and thought Urvaṣí to be his own, but the nymph vanished, triumphant at her success. Stung by separation, he breathed his last in the month of Mágh in Samvat 1140, the moon being on the sign Ádrá.

The body of Alá-uddín was made of his head, that of Hamír of his breast, and those of Muhammad Sháh and Mír Gabru of his hands.

Chapter II.

In the fort of Ranthambor Hamír Chohán was born to Ráo Jeyat at midday, on Sunday, the twelfth of the wane, in the month of Kártika, Samvat 1141.* All the members of the royal family were greatly delighted. A sumptuous feast was given to all the Bráhmaṇs of Ajmer and Chitor, and large gifts were distributed among beggars, minstrels, musicians, and others. Rejoicings prevailed in the city. It happened that on the birthday of the child a servant was polishing an iron pot with a stone taken at random from the ground. The pot turned into gold. The man was greatly surprised. He took the stone to the king and informed him of its quality. It was predicted of Hamír that he would wage a terrible war with Alá-uddín Khilji, of Dehli. He was married to Aṡá, the beautiful daughter of Ráo Puar of Ábu, and, on the death of his father, ascended the throne of Ranthambor.

The great Alá-uddín was born a contemporary of Hamír. It is said that the princess, his mother, seeing the newly born babe very ugly and ill-shaped, commanded a nurse to carry it away and replace it by a child of handsome appearance. The nurse obeyed her orders, and thus was the boy, who was to be an emperor, brought up in the nursery of a carder. His foster-father called him Alá-uddín. In the days of his boyhood he would sometimes play at king, making of his playmates, one the vizier, another the Bakshí, a third the attendant. He would dismiss some and appoint others. While in the king's palace, the son of the carder would play at his father's profession.

Ten miles to the north of Dehli there was a temple of the Sharaoji sect of Buddhists. A widow, daughter of a merchant, used to visit it every day. Once Parasnáth, the principal *tírthankar*, appeared and in heavenly accents said—"Daughter, I am pleased with thy vows; blest be thou with the enjoyment of two sons."

The woman replied—"Lord, I am but a poor widow, and therefore if I should be brought to bed of a child, it would bring a stain upon my name and that of my family."

The heavens opened and the following words were heard. "None shall be able to perceive thy womb. Thou shalt be delivered of twins at the time thou dost please to appoint. They will be very rich, and their names will spread far and wide."

* This date, as also the one on the preceding page, is wrong. According to Muhammadan historians the siege of Ranthambor took place in A. D. 1299-1300, and according to the Hamír Rásá (*infrá*, p. 203), Hamír was at the time twenty-eight years old, so he must have been born in Samvat 1328, Saka 1193 and A. D. 1271. Ed.

All was profound silence. There was none but a carpenter at work on the outside who overheard this prophecy. He thought that a very fortunate mother the widow would be, and so if he could seduce her and take her away from her parents, he would indeed be very happy. In the disguise of a merchant he came every day to the temple. Many days after, having availed himself of an opportunity, he said, "Virtuous woman, you are blessed, for you walk in God. If it please you, my *rath* (carriage) is at your service." The widow thanked him for his kind attention, and, believing in the honesty of his purpose, accepted the favour. Many days passed away. The carpenter said, "Merchant's daughter, a pious and devoted visitor of temples should appear before her gods in her best dress, and wearing ornaments." The widow not anticipating any evil, commenced doing so. By and by he gained her confidence so much that he succeeded by cunning in taking her to the city of Ujjain in Málwá. He made her a proposal of marriage, which she rejected with scorn. "You have brought me," said she, "away from my parents; very good, but I will never consent to your marrying me." When the lady's jewels and ornaments, the means of their support, had been all sold, the carpenter addressed her—"Merchant's daughter, do you remember the sound which you had the good fortune to hear while in the temple of Parasnáth?"

The widow replied, "Yes, I do." Immediately after, she fell on her knees and prayed to Parasnáth, when lo! by the command of the god she gave birth to twins of very handsome appearance. One of them was named Basanta Pál, and the other Tej Pál. Accidentally the mother found a very large pan of gold and diamonds buried under ground. Fortune smiled on her from that moment, but she did not let the carpenter see her babes. One day at the eager and humble request of the man, the twins were shown to him, but alas! poor creature! the very sight of them brought on instant death.

When the twin-brothers grew up to boyhood, they insisted upon their mother telling them, although she was very loth to do so, where their father was. As soon as they had the knowledge of their miraculous birth, they thought themselves to be the favourites of fortune and set about their business with redoubled energy. On attaining majority they, with all their treasure and establishment, removed to Dehli. There they began to carry on mercantile transactions, and, by giving very handsome *nazzars*, rose to the notice of his majesty the emperor. But all other Sharaojis of the city looked upon them as aliens, and therefore did not allow them to take part in their social festivities. However at a meeting of that sect on Grinár, they were, on the testimony of the Sharaojis of Ujjain, received into caste. It was proposed to build two temples on that memorable spot.

A few days after returning to Dehli, the merchants called a paṇḍit to search for a lucky hour in which to lay the foundation-stones of the temples. The paṇḍit replied, "I shall tell you the time, but it is no use your building the temples, because an emperor has been born who, it is predicted, will pull down all the sacred edifices to the dust." The merchants said "Where lives such an emperor?" "In a carder's house, playing in the dirt," was the paṇḍit's reply. The merchants were shown the house. They filled two silver plates with *mohars* and, placing two diamonds on them, presented them to Alá-uddín at the playground. Thereupon the boy said—"See, Sirs I am but a poor carder. I need not such valuables. Pray, take these to the prince in the royal palace." The merchants replied "You are our prince, the sole master of our lives and property." Alá-uddín looked pleased. He kept with him only the diamonds and divided the *mohars* among his playmates. Then said he, "How do you know, merchants, that I am your prince? Who told you so?" "A paṇḍit" was the merchants' reply.

Alá-uddín.—"Bring the paṇḍit to me, and without delay give him these silver plates."

Accordingly the merchants took the paṇḍit to Alá-uddín, who asked him as follows:

Alá-uddín.—'Bráhman, are you sure that I shall be an emperor?'

Paṇḍit.—'Yes, certainly I am. May it please your Royal Highness to grant the request of the merchants.'

Alá-uddín.—'Merchants, what do you want to be done?'

Merchants.—'We beseech your Royal Highness to give us permission to build two temples.'

Alá-uddín.—'Never can I grant such an unreasonable request. I have made it a point in my life to pull down all temples to the dust. The gods have unjustly cursed me by throwing me into such a miserable state, and I will drain the last drop of my blood in wreaking vengeance on them. But as you have done me honour and made me aware of what I shall be, I feel bound to make an exception in your case. Go and build the temples, but on their roofs raise mud-walls to the height of a cubit and a quarter. Those walls shall I pull down, when I shall set out on a crusade against gods and their holy buildings.'

The playmates of Alá-uddín, when they returned home from the playground, told their parents, how their Aliá distributed *mohars* among them and ordered the merchants of Ujjain to build temples. On hearing this news the emperor had Alá-uddín brought to the palace, while the boy who had been brought up there was sent to the carder's hovel.

Alá-uddín married the daughter of Bubak Sháh of Kandahár. A year after his marriage, he ascended the throne of Dehli. It is written that he

besieged eighty-four forts and captured them. In the course of taking a certain fort, a devil was made a captive by four warriors, and a bastion was, by the command of the emperor, raised over his head. In the dead of the night, while all was still, a sound came: "Alá-uddín, Alá-uddín, mighty monarch, dost thou presume to keep me buried for ever under these walls? huge pillars are but as hairs on my head. Release me, or this very moment I am free and thy bastion broken.'

Alá-uddín.—"Rest, unquiet spirit, I give thee the entire right over the throne of Sulemán."

Chapter III.

Once the emperor Alá-uddín intended to go out for a hunt. *Haudás* were mounted upon elephants, and many noble steeds saddled. All the vassals, then present in the imperial court, with all their retainers and acquaintances, marched, each wearing his hunting dress. Numerous heroes strutted along with an important air, some restless in pride, others advancing in solemn gait. Trumpets, drums and other musical instruments were sounded. Alá-uddín took with him a queen, who in beauty and fascination could well be compared with the fairy Urvaśí of heaven. She charmed him, as the white moon-beams charm the eager *chakor*, and the pretty lotus binds the bee in love. Packs of dogs, leopards, hawks and other beasts and birds of prey followed the hunters. Thick columns of dust rose high up in the air and hid the sun. The loud sound of the drums seemed, as if peals of thunder were heard from the dark clouds of the rainy season. Numbers of horses ran briskly and passed off like meteors. The imperial veterans clad in mail, began to play at arms, wrestle, bend their bows, adjust arrows and display their skill in various kinds of heroic feats.

At last the hunters entered a forest. They saw that it was very deep, and that profound darkness reigned over it, and heard the murmuring of rivulets and the rushing of springs.

[Here follows a description of an intrigue between Chimná Begam and one Muhammad Sháh, which we omit.]

The queen confessed her guilt, but the emperor doted upon her and, fearing lest the execution of the Sheik should be followed by suicide on her part, exiled him, saying, "Be gone, Sheik, be gone for ever from the confines of my dominions. I will kill the man who may chance to give thee refuge. Thou art deserving of the gallows. Muhammad Sháh, there is no one on earth who is so bold as to shelter thee from my anger, thee who hast wronged me. I will circulate what thou hast done to the four

corners of the world. Dost thou know any prince or emperor who can promise safe-keeping to a culprit banished my territories ? Canst thou tell me his name who is mightier than I, and to whose door thou dost intend to go seeking protection ? There is no place on this wide earth, but Mecca, where thou canst be safe from utter ruin and destruction."

The Sheik having joined his hands, replied, " Mighty is the father of all creatures. The fertile earth is never barren of heroes. I shall go to the court of one who will, I am sure, receive me hospitably and challenge you to fight with him." Then bowing he continued, " I will never return to Dehli and bow down to you again with prayers for shelter, but meet you on the battle-field and show you my skill there."

Muhammad Sháh returned to his house, sad at the thought of parting from his dear friends and relatives. He went to his brother Mír Gabru to bid him farewell. " Why are you sorry, brother ?" asked the latter. " Has any one done you wrong ? Tell me. My heart burns with anger." " My doings are my enemy, dear Gabru" replied Muhammad Sháh. " I am no longer destined to eat and drink here in Dehli. How can I then live here, and who on earth can keep me within the city wall. Think on these things and be silent."

These words struck Mír Gabru as thunder. Immediately he fell in a swoon. Muhammad Sháh consoled him in various ways, saying, " Do not be sorry, brother ; serve his Majesty, the emperor, and live in peace and plenty." " Then go to Mecca, dear Muhammad Sháh," replied Mír Gabru, " or live with Hamír, if that generous Ráo will give you house and shelter."

The Sheik went, leaving the confines of Alá-uddín's dominions. He took with him twelve companies of soldiers, five elephants, carriages, servants and young male and female slaves. Numerous camels followed his train, laden with fine looking tents and furniture. His wife went with him. On his way, he used to hunt deer wherever he made a halt. His men were all of one mind with him.

A confidential herald named Sultán Khán was sent with the exile to report on his whereabouts, and to inform the potentate, who might chance to give him shelter, of the cause of his banishment.

Muhammad wandered far and wide, but nowhere could he find refuge. He went to the courts of almost all the princes, both Hindú and Musalmán ; but none dared to protect him, and thereby incur the displeasure of Alá-uddín. At last he intended to go to the *durbár* of Hamír and arrived outside the walls of Ranthambor. He saw the strength of the fort, the height and inaccessibility of the hill upon which it was situated, and various indications of the might of its royal master, and became full of delightful assurance of his warm reception there. When his horses and elephants

had been tied, he took his meal. A carpet was spread in his tent, whereon sat his heroes, ministers and friends. They were asked to go to the Ráo and inform him of all particulars. He said "First tell him my *saláms*, next the events which have led to my banishment; tell him that if it please him to meet me, I shall wait on his royal presence. You shall be able to know by these statements how virtuous and religious he is. Look at his features and examine them with care."

The heralds met with a warm reception. They informed the Ráo of all things as they had happened. The latter asked, "Is the Sheik safe, is he well?" He was delighted and sent his son to call the exile to the fort.

Muhammad Sháh started dressed in his best clothes to wait on Hamír. He took with him five horses, one elephant, one bow of Multán, made of nine pieces of buffalo horn, a sharp sword, a beautiful palanquin, two pieces of ruby, a necklace of pearls, two hawks and two hunting dogs. His escort went on foot. The train stopped at the principal gate of the fort, awaiting orders. Some nobles of the royal court were sent to receive the Sheik. They took him to the audience chamber of the Ráo, who, with all the members of his council stood up, embraced him and enquired after his health. The Sheik touched the Ráo's feet with both his hands and stood up, having joined them in submission. After having offered him the costly presents, he said, "Grant me shelter, generous Ráo, shelter me in my distress. I have gone to the courts of the kings of Kandesh, Kábul, Multán, Káshmír, Guzerat, Gandwáná and Bengal, but none has dared to receive me: they all have tried to get rid of me, the sooner the better. I am at your mercy, noble lord, save me in this extremity."

Hamír replied, smiling, "So powerful is Alá-uddín that none has ventured to shelter you from his anger. Live here safe, Sheik, live here within the fort, under the shadow of my protection. I, Ráo Hamír, will defend you, even if my defending you should cost me my life. Need I tell you more?" He accepted the presents and thus spoke out his mind—"I will give up my body, wealth, fort and kingdom, but be sure, Sheik, the emperor will never be able to get you."

"May it please you, mighty Ráo," said the Sheik, "to consider all the consequences that will follow, before you promise me safe-keeping. I have wandered far and wide over India and seen that almost all the Kháns and Sultáns, Rájás, Ráos and Ránás fear the power of Alá-uddín. He said at my parting, that if in any part of this wide world, supported by *Shesh*, any one should give me protection, he will cut him in pieces. He who incurs his displeasure must not hope for life. Promise me safety and have the glory of keeping a houseless and helpless creature with you, after having fully considered all these particulars." "You need not warn me," replied Hamír,

" of the danger I would expose myself to by giving you refuge, and thereby provoke my anger. I have spoken my mind, and do you think I can retract the words which I have once said? The descendants of the Chohán are never false to their promise. My firmness in acting up to what I have determined to do can never be shaken by the love of life and self-interest. Be patient, Sheik, and live here without fear. The mountains may move, and the polar star leave its fixed place, yet be sure, Muhammad Sháh, the honour of my resolution can never be violated It stands in unfaded glory for evermore."

The following presents were made to Muhammad Sháh; a bow, golden ornaments, a necklace of pearls, a turban set with diamonds, and a shawl. A *jaghir* worth five lacs of rupees was also given him. A noble palace was appointed for his residence. The Council broke up with great joy and excitement. Muhammad Sháh went to his new mansion, riding on a horse. His heart became easy at the sight of various comforts which were stored there for him. Then the Ráo gave a grand feast to him and his companions.

The imperial herald, who had followed the Sheik to the fort, addressed himself to Hamír—" Do not give shelter to Muhammad Sháh, great Ráo, because by doing so you will incur the displeasure of the most powerful emperor in the world. The mighty Alá-uddín is an inspired warrior. If the weak match with the strong, be sure, prince, they will come off the losers. Listen to my words, attend to my advice. You are a descendant of a family which has played an important part in the history of your country. Why leave an ocean big with invaluable pearls and rubies for a worthless tank full of mud and weeds? What qualities has this Sheik? See, he has left all his possessions for the vile enjoyment of a female. I know that you are familiar with all princely principles; one of them is, 'Let a man die, if his death alone can ensure the safety of a family; forsake a house, if its destruction can save a village; let a city go to destruction, if by leaving it you can preserve the welfare of a country.' Why do you push all souls to death for the safety of one, and that one an ungrateful wretch, having neither reason nor conscience. Your refugee is the vilest of all creatures. He had not even the slightest scruple to defile the bed of his master. Think, before it is too late. The anger of Alá-uddín is like a red flame of fire which burns all that come in contact with it. His power destroys all who have the rashness to incur his displeasure. See, even the gods have fled away, leaving their temples. On the other hand, if you do not give refuge to the Sheik, your friendship with the emperor will become stronger and stronger every day. Why drop poison in a pot full of nectar? You will have to pay very dearly for your folly. Consider, therefore, now

in time and get rid of the Sheik as soon as you can. See, Rávaṇa conquered the three worlds and had perfect control over the gods, men and serpents; but when he made Raghunáth his enemy, the splendid and strong fort of Lanká was sacked, burnt and pulled in the dust. Who can subdue Alá-uddín? If you think you can, you will certainly be destroyed."

Hamír.—"O herald, I can never lie. See what will be the condition of that poor, deserted man, if I deny him protection. I will draw my sword in the teeth of all difficulties, fight with Alá-uddín and crush his pride. Either I shall be transported to heaven a little early, or continue reigning in my fort of Ranthambor. Go, thou messenger, and tell the emperor that the Sheik is safe under the roof of Hamír Chohán, and that preparations for war are being made within the fort."

The herald went to Dehli and, having joined his hands and bowed down to Alá-uddín, thus prayed, "Dreaded Majesty, the Sheik Muhammad Sháh wandered far and wide, over the northern, the eastern and the southern parts of India, but nowhere did he find shelter. At last he went to Ranthambor and humbly prayed to the Ráo of that place, who took pity on him and promised him safe-keeping within the walls of his fort."

Vazir Mihram Khán.—"Never has the Ráo done so. How can he, a vassal to his Majesty, afford house and shelter to one banished the dominions of his lord and master? Never say such words again."

Herald.—"Vazir, my words are not false, but true to the letter."

Alá-uddín.—Write a *firman* to Hamír, and then you shall be able to know whether he speaks the truth or falsehood.

Accordingly a *firman* was written and sent by the same herald to Ranthambor.

Firman.—"Hamír, be not obstinate; yield; do not give asylum to a thief. I am called the master of Dehli, and you are a mere Ráo. What can you hope to gain by incurring my displeasure? Why make yourself culpable? Take as much land and gold as you wish for. Send back the criminal to me, the moment you read this *firman*."

Hamír's reply.—"Attack me, fall upon me, but I will never send you Muhammad Sháh. I have promised him shelter, and for the monarchy of all the world, I will never break my word."

The emperor's blood boiled. He rebuked the Vazir for denying the truth of the herald's statements. Another *firman* was written and sent to the Ráo.

Firman.—"How many forts, have you, Hamír, and how strong are they, that you are so proud and stubborn? Consider, know that I am a gifted hero. Send the Sheik. Be reasonable."

Hamír's reply.—"Your Majesty need not send me so many *firmans*.

I will never set aside my resolution. How can I deliver into your hands the man whom I have promised safe-keeping ?" (To the herald.) " Go to the emperor and say to him, that if it be possible for the sun to rise in the West and the waters of the Ganges to flow from her mouth to the source, then will it be possible for Hamír to violate what he has deliberately resolved upon. I rule over the territory given us by the sage Padam. When the time appointed for the destruction of my fort will arrive, none shall be able to avert its fate. What is not fated to be, will never come to pass ; while what is fated to be, must happen. Wealth and death are in the hands of God, then why fear men ? I have given my word to the Sheik, and how can I forsake him ? To be faithless to a refugee goes hard against the virtues of the Kshatríyas. I will never join my hands and bow down before Alá-uddín. If he fall upon me, I will fight ; I care neither for my life nor kingdom." Hamír added the following words to his letter : " Far from me be the thought of sending you Muhammad Sháh, I will never send you even his picture. These are my true words, true in every respect."

The emperor, on reading the reply of Hamír, became very angry ; but, at the request of Mihram Khán, the prime-minister, a third *firman* was, in consideration of his religion, sent to Hamír.

Firman.—" Thousands and tens of thousands of men like you are licking the dust of my feet ; many brave heroes, such as you, have I have brought under subjugation. Rule in safety over the territory of Ranthambor. Why stake life and kingdom for the sake of a villain ? Come with him and meet with me. You are my servant, and so shall you ever remain although you fall not at my feet. If you continue to persist in your unwise resolution, I, emperor Alá-uddín Khilji, do promise to burn you and your house to dust. Do not be obstinate, Hamír. Why try to wake the sleeping Ganges—disturb the peaceable state of things ? My anger is like a red flame of fire which burns mountains and forests. The Rájás of the four quarters of India pay me tribute. Who dares oppose me ? Can a tank be equal to a river ? No it never can."

Hamír's reply.—" Logs of wood are burnt to ashes by fire, but water can put it out, however strong it may be. Listen, emperor Alá-uddín, all must live their time. Who can kill a man when he is not fated to die ? If I send the Sheik to you, the sun, a witness of my promise, will be ashamed of my cowardice and villainy. I, Ráo Hamír Chohán of Ranthambor, do hereby declare that I will never violate my promise. Come, lose no time, march and fall upon me."

Then went the imperial herald dejected to Dehli. He said, " Mighty monarch, Hamír of the fort of Ranthambor does not care at all for your power. His cavalry, infantry and heroes are numerous. Besides, firmness

in keeping their resolution is a hereditary virtue of the Choháns. You have conquered the whole world and made many potent chiefs and monarchs powerless and humble before your rod, but now Hamír matches with you and challenges you to fight with him. Either he or you must be victorious. I have advised him many times as to the folly of his keeping the exile under his roof. He frowned, his blood boiled with anger, even at the mention of the name 'Muhammad Sháh.' 'I shall fight with the emperor, face to face,' said he 'and cut the imperial forces to pieces. Then at last I will offer my head to the great Mahádeo, that my glory may be sung in the worlds below and the heavens above. I have made a resolution. How can I break through it? I do not fear the anger of Alá-uddín, I do not fear his massive arms, I do not fear his fury, nay I do not fear death, but I fear dishonour, and above all, I fear staining the virtues of my renowned ancestors.'"

Chapter IV.

Alá-uddín, wondering at the intrepidity and decision of character of Hamír, made up his mind to besiege the fort of Ranthambor. With a view to obtain information as to the Ráo, his forces and the government of his states, he made the following queries to Sultán Khán, the herald, who was well conversant with those particulars.

Emperor.—"How strong are the forces of Hamír?"

Herald.—"Imperial Majesty, Hamír has 117,000 horse, and his foot are 200,000 in number. In their midst rides he, the great Ráo, on an elephant. He has 500 commanders, tall, robust and well-skilled in the art of war. He commands the allegiance of the princes of Chitor, Narwárgar and Gwáliar. The forces of one of his vassals, named Randhír, consist of 31,000 horse, 80 elephants, and 10,000 heroes all invincible."

Emperor.—"How strong is the fort of Ranthambor?"

Herald.—"The fort is very strong, and inaccessible to an enemy. Four roads lead to it, and eighty-four passes, very close and narrow, go winding amidst its surrounding hills. Five large tanks, fed by mountain-torrents and therefore deep beyond compare and filled to the brim, strengthen the defence of the fort. Temples of Gaṇeṣa, Ṣiva, Nandi, Bhairav, Durgá and her attendant goddesses are situated within it. It is guarded by a body of 600 Nágas, all veteran soldiers, and 70 very wide-mouthed cannons, which cannot be moved, and at whose report mountains tremble, women miscarry and rivers become dry. Its supply of provisions and ammunition is immense. Two very large underground stores are well stocked with grain, weighing one crore, ten lacs and ten thousand maunds. The weight of the sunn cord and pack-thread stored within the fort is ten lacs of maunds; that of bullets four lacs, that of *ghí* twenty thousand, that of *tejra* (opium husks or

the capsules of the poppy) ten thousand, and that of powder nine lacs. Heaps upon heaps of salt are piled like hills. There are different stores for camphor, musk, saffron, spices, *itar*, oil, iron and lead."

Emperor.—"How does Hamír rule over his *Ráj?* Describe his morals and ways of government."

Herald.—"In the character of Hamír are combined the highest qualities of a king with those of a moral man. As a king, he is a great lover of justice; merciful to his subjects, affable to the virtuous, charitable and benevolent to the poor. No tax is levied in his states. His people, 6,710,000 in number, live in peace and prosperity. As a moralist, he is strict in the performance of all the austerities of his religion, with unflinching courage, bold decision of character, and total disregard for his life, when it stands between him and his promise. He abstains from flesh and wine, tolerates no Muhammadan forms of worship, neither *báng* (call to prayer) nor *nimáz* (prayers). He has pulled down all the mosques in his territory and erected temples in their stead, whose walls resound with prayers offered up to Hari. The hymns of the god are chanted, and his words read over the length and breadth of his dominion. The Korán can never be pronounced there. No man can jest with a woman other than his wife. The son pays the greatest possible respect to the father, talking with his face down all the while. A woman who proves false to her husband is punished with death.

Emperor.—"Tell me in brief the charity of Hamír."

Herald.—"Five *mohars*, each weighing 5 tolas, and 12 cows with their calves are given every morning at sunrise to pious Bráhmaṇs, who are daily fed in the palace. 107 maunds of *khitchari* (cooked rice and *dal)* are daily distributed among disabled men, and 12 maunds of grain are scattered to be picked up by birds."

Emperor.—"Tell me the character of his queen."

Herald.—"His queen Aṣá is the perfect pattern of chastity and is always engaged in doing her duties as a wife. As a mother she is a Suníti of her age, and is very kind to her subjects. Hamír has a prince and a princess both unequalled in beauty. The sun stops in his airy path to get a glimpse of their royal persons, and flies buzz about their mouths as they do about a sweet-scented flower. In brief, mighty monarch, both the Ráo and his wife hold under their bodies and devote their minds to things of a transcendental nature, deep abstractions of philosophy and mental discipline. The great Chohán prefers the substantial to the unsubstantial, the lasting to the frail and evanescent. As a true Rájpút, he does not lack physical courage: brave and firm like a rock, he never shows his back to his enemies. His subjects are all happy because of the virtues of their ruler. The young as well as the old, the rich as well as the poor, the able as well as the disabled, all find in him their affectionate friend."

Emperor.—"What is the age of Hamír?"

Herald.—"Hamír is an accomplished youth of 28 and, at this early age, a miracle of genius, prudence, heroism, wisdom and intelligence. When he comes to the *durbár*, the minstrel Maqná thus sings his praises: 'Bestower of gifts, great Ráo of Ranthambor, the hero of heroes, that bring on the golden age in this corrupt world, your virtues are incomparable, and your might almost divine. Your truth is like that of Harishchandra; charity like that of Karan; attainments in learning like those of Bhoj; sympathy with the poor and administration of relief like those of Vikram; and beauty of features like that of Cupid. You are a Brikbhánu in power. Your words are sweet and full of love, and you are well versed in fourteen kinds of arts and sciences. Your wealth is like Indra's, your treasury and stores like Kuber's, whereon Riddhi (prosperity) and Siddhi (fulfilment), two wives of the god Gaṇeśa, always preside. There are eight kinds of *siddhis* in your states, and all pieces of iron are turned into gold.'

"Thick, green gardens lie round about his fort, while around them are deep and dark forests. The mango trees, the pomegranate, lime, apple, berry, orange, *khirni*, plantain, cocoanut, dates, *chiranji* and jack, all are loaded with their sweet, delicious fruits. There are very many *umer* trees, hundred kinds of *khyotás*, the large acacia and the beautiful *khir*. The bees hum amidst various flowers and draw nectar with great glee. Here you can see in full bloom and blossom the rose and the jassamine; there the *ketaki* by its sweet smell draws together and charms a number of bees. Here beds of *keora*, *johi*, *jay*, *sindup* and *sabbu* beautify the scene; there the *pádal*, *chameli*, *kókbelá*, *satrang*, *srikhand*, *kund*, *málati* and *shewti* give fragrance to the air. The *matia* plants are loaded with flowers and the *lállbang*, vine, the nimble *madhoj* and other creepers are plentiful. There are palms and *tamáls* on the banks of tanks, which bear on their broad bosoms the dancing red lotus and the white lotus with the bee, enjoying itself, being hid amidst the petals. All around are the lofty hills covered with dense forests and clad in green. Waterfalls pour from on high, where beside the waters play the peacock, the duck, the *chakravák*, the *suk*, the *chatrak* and the blackbird."

Chapter V.

Alá-uddín's soliloquy.—"I do not care for the pride of Hamír. In a moment I can bring him to my feet, knock down his fort, seize the criminal Muhammad Sháh, and drag him to Dehli. Sure as my name is Alá-uddín, I will do all these things. A Ráo, possessing one fort only, vaunts so much of his might! Surely I cannot bear it. Yet I have scruples as to the cer-

tainty of my victory. I know not what might be the issue of my attack, if I rashly attempt it at once. Defeat, as well as victory, is in the hand of God. Who knows that I shall never be brought to the wall? It is, therefore, that I think it advisable to act up to the council of my ministers and vassals. I shall call a grand meeting and court discussion."

An open *durbár* was held at the Council hall. The emperor thus addressed it:—

"My noble Kháns, Sultáns, Ráṇás and Ráos—you have been for a long time aware that a Sheik, named Muhammad Sháh, was for some heinous crime banished the dominions of our empire; you are also aware, that he wandered far and wide, without house and shelter, till he came to Ranthambor, where he found protection under the roof of the Chohán Chief of that place. I myself, through one of my heralds, tried in various ways to convince the Ráo of the folly of his action, the certainty of his destruction and that of his fort, if he persisted in refusing to send me the culprit. But he, in spite of my friendly advice and remonstrance, cares not at all for me and my power and in a haughty style challenges me to fight. (The audience shouted "Let us draw our swords, let us draw our swords.") Hear, my noble Chiefs, in order to justly punish the folly and obstinacy of the Ráo, I have determined to capture his fort, and plant on its tower the standard of the crescent. (The audience rose up from their seats and, reverently bowing their heads, stood ready to receive orders.) Be resolved, therefore, one and all, to fight. Faint not, fear not, but with hearts of steel let us march to curb the pride of the upstart and to show him the power, glory and energy of the followers of the true faith."

All the chiefs, assembled in the council, exclaimed with one voice—"We are ready to die, emperor, ready to sacrifice our lives and interests for this sacred and profitable cause: sacred because it concerns Islámism, and profitable because it concerns the interest of our monarch, the sole preserver of our lives and property. Here is a rule and a very good one it is—If you go to hunt a jackal, be armed with all weapons necessary to hunting a lion. The proud Ráo challenges you to fight. It behoves us, therefore, to attack him in his own house, demolish his fort and burn him and all that belongs to him to ashes."

All was excitement, when the Vazir Mihram Khán, with joined hands, thus began: "May it please your Majesty, I ask your royal permission to speak only a few words. There is a great difference between hunting a lion and hunting a jackal. Do not think them all one. Why do you increase your anger? Why make much of the malice you bear towards the exile? because the risk a man incurs by being engaged in a war is fearfully great. He hazards life and prosperity and can never be sure of victory.

If he come off a loser after his best endeavours, then all is over with him. The Chohán are in no way inferior to the Musalmáns in martial bravery. The warlike Prithvíráj defeated Muhammad Ghori and drove him back to the mountains of Ghor. The bold Bisaldev committed great havoc among the Muhammadan ranks and obliged them to retrace their steps from the very gates of Ajmír. Do not expose yourself and your subjects to the risks of a war. It seems to me wise to make the figure of the exile of lace and behead it, proclaiming his execution."

The emperor became greatly incensed at these words of the Vazir.

War was proclaimed. Egypt, Kabul, Ghazni, Kandahár, Khorásán, Rúm, Arabia, Káshmír, Irán, Turán and Habesh (Abyssinia) poured forth each its quota of soldiers. There was a vast sea of spears, swords, muskets, shields, bows and arrows, all glittering in the sun on the broad plain of Dehli. The emperor could not help laughing at the rashness of Hamír, seeing before him, as far as his eyesight could reach, the unending line of the soldiers who were drawn up in battle-array, with streaming banners, at the call of the muster-rolls. There stood before him, bending their heads, Lodis, Paṭháns, Gohán, Burdwans, Sarunis, Khorásánis, Khayam Khámis, Syads, Mughals, Adamkhoris, Chustis and Scindhis, all numbering 4,510,000 troops, horse, foot, artillery and archers.

"How foolish is Hamír," exclaimed Alá-uddín, casting his eyes from one flank to the other, "how foolish is he to persist in his unwise resolution. He, the butterfly of a day, flitters about the strongest of fires and knows not that after a few minutes he is to fall on it with his wings singed, his beauty gone, his pride crushed, and above all his life sacrificed to imprudence. Independently of the troops of my allies, so numerous in number and obedient to my call, my tributary and dependent chiefs of Surat, Girinagar and of all the provinces to the south and east of my wide dominions are ready to give up their lives and interests for the sake of me, their sole monarch. 13,088 Omráos come from all parts of my empire to the imperial court, twice a year, once on Chandtij (a festival) of Bhádun (August) and once in Chait (March). They prostrate themselves at my feet and remain in that position, till I bid them hold up their heads. My power is acknowledged far and wide, my authority undisputed, my heroism unparalleled, my pride and glory unbroken, and courage almost divine. I will, first of all, break down the ten walls of the fort of Ranthambor, make defence impossible, and then burn Hamír with his wives and children in the very fire which his obstinacy alone has kindled to such an extent."

Alá-uddín set out with his immense army in the month of Chait. Thick columns of dust rose high up in the air and hid the sun. When his

legions began to advance, it seemed as if an ocean, having left its boundary, rolled on, sweeping everything before it with great fury. The cavalry, consisted of 27,00,000 of excellent horsemen, of whom 700,000 were Hindús. There were 10,000 messengers of war, 400,000 of pioneers, 100,000 of writers, 200,000 of merchants, 400,000 of female cooks, 200,000 of mules laden with treasure, 400,000 of grooms and 100,000 of mendicants, 200,000 of artillerymen, very able and powerful in the art of destruction, and 300,000 of camels, loaded with tents, furniture and powder bags. 5000 elephants, one exceeding the other in strength, followed the camp. They seemed as if the dark clouds of the rainy season advanced roaring and thundering in their way.

Drums and trumpets sent forth their warlike peals and stirred up spirit and enthusiasm in every heart. 'Alí Khán headed the van of the army, and Himmat Bahádur the rear. 3000 banners were unfurled. A space of more than eighty miles was taken up by these innumerable hosts, so that at every halt the pioneers had to clear such an extent of land of dense forests. All wells and tanks which they happened to pass by were drained, many a narrow valley was blown up and extended.

The report of the expedition of Alá-uddín reached the territory of Hamír. Many cowardly Bhumïás (petty chiefs) fled, leaving their possessions, to live amidst defiles and winding caves of mountains, whereas heroes, nobles and soldiers made themselves ready for battle. There was a hill-fort named Málarná from which descended a body of brave Rájpúts. They took by surprise a detachment of Muhammadan troops encamped below in fancied security. 10,000 soldiers of the Sháh of Kablánúr were cut off, and the camp pillaged.

When the intelligence of this event reached the emperor, he ordered his soldiers to pursue the plunderers closely. They succeeded in overtaking them on the bank of the Banás. A party of 20,000 Ráwats, headed by five heroes—Puañr Abhay Singh, Ráṭṭor Bharji, Bagel Hari Singh, Katchwá Bhím Singh and Chohán Sardul—hastened to the aid of the pursued even without taking the orders of their liege-lord Hamír. The imperial tents arrived there and had to halt for two days.

A detachment of troops, commanded by Himmat Bahádur, came forward. They were met by a body of Rájpút soldiers under Hari Singh Bágelá and Bhím Singh Katchwá. 'Alí Khán, at the head of 200,000 soldiers, joined his brother Himmat's ranks. The Rájpút warriors, although surrounded on every side by the masses of the Muhammadan army, pressed on and began to fight. Very great was the skill displayed by them. Now they applied arrows to their bows, now they shot them, pulling the strings

up to their ears. Engaged in battle, they seemed as if the great Arjun was again fighting in the field of Kurukshetra. There was a play of swords for hours. The blood of the slain rained as showers of the rainy season. The armours were cut, and bodies divided into two parts. Many spearmen danced with fury, stabbing all that fell in their way. The sharp points of lances, seen on the backs of the dead, were as horns of the moon peeping through dark clouds. Many heads were cut off ; but lo ! the bodies rose with swords in their hands and made havoc among the hostile ranks. Daggers went right through the bellies, the wide battle-axes opened large wounds in the chests, whence flowed jets of blood in torrents as pour down streams of water besoiled with red clay from the tops of mountains. Many a wounded man flew with wild fury at his nearest adversary, killed him and then fell down dead on his body. At last the Muhammadans, panic-struck, ran away in confusion. Many bewailed their lot, and there rose a cry of despair.

The victorious Rájpúts carried off immense booty, consisting mostly of treasure. The loss on the Muhammadan side was 30,000 foot, 20 elephants, and 2000 horse. The number of the wounded could not be counted. On the Rájpút side, there fell 16 warriors only, and 30 were wounded, among whom was Puañr Abhay Singh who had received a slight injury on his head.

Having defeated the Muhammadans, the Rájpút warriors went to Ranthambor and bowed their heads before Hamír. Then they informed him of all the events as they had happened. He ordered them in a firm tone not to fight any more battles with the emperor while he was on the way.

The Vazir Mihram Khán said to Alá-uddín : " Imperial Master, the territories of Hamír are very mountainous, and therefore difficult of subjugation. See a body of plunderers and thieves descended on us from hill-tops and declivities and went away, having pillaged our goods. So it behoves our troops to be very cautious, and always on their guard."

Alá-uddín's tents were pitched outside the hills of Ranthambor. Mirs, Amirs, Kháns and others arrived there, not without scruples and were encamped by the side of wells and tanks all round the town.

Chapter VI.

Seated on his hill-fort, which commanded the view of many a mile, Hamír saw the grandeur of the imperial camp. He remarked, laughing, " Lo ! Alá-uddín has come, a gipsy at the head of numerous flocks. He, with all his pride and parade, shall never be able to stand the first shock which my chiefs and I will give him and his troops. The *Mlechchas* (infidels) of all the ten quarters of the world have accompanied him ; but

I will disperse them as flakes of cotton in the air, and this I resolve to do very soon. If it please God to determine otherwise, I am sure to cause wholesale massacre in the second battle."

Hamír's letter to Alá-uddín.—" Emperor, arm yourself with two bows and ten arrows. War is to be waged between you and me. Why close the roads to travellers? Do not molest them. When you have come to Ranthambor, you will very shortly see how strong are our forces in an open battle-field."

Alá-uddín's reply.—" Do not think me, Hindú, a common person: I am one inspired from heaven, and gifted with the sovereignty of Dehli. The ways of the Hindús and those of the Musalmáns are different, and it is my avowed object to make them follow one—the only way of truth. Four devils and eighty-four saints are at my service, waiting only for my sovereign command. You have given refuge to Muhammad Sháh, and do you venture to hope for life? Yet consider. What profit do you hope to get by keeping a culprit with you? Know that the issue of your stubbornness will be the destruction of lacs and millions of men. Then why not leave one, if your leaving him would make the aspect of things look bright?"

Hamír's letter.—" O Emperor, you have never heard of the virtues of the Kshatriyas. As you are a saint of Mecca, so am I a hero of heaven. Between you and me there is no resemblance, and this I have told you often. I will never break my promise, which I have resolved to keep after a careful consideration of all circumstances. I will never violate it. Our fort was founded by Śiva for the defence of the oppressed and the glorification of truth and Rájpút power. Why care for your body which is frail and transient at best? Where lies the use of living an inglorious life? The anchorets never give up spiritual meditation and abstraction of their minds for things worldly and, therefore, corrupt. The Rájpúts never give up their hereditary virtues. I will never return you the exile Muhammad Sháh, until my head be severed from my body. The Chohán and the Muhammadans have been and are often at war with one another. Prithvíráj slew the saints Miran and Kwájá with their 180,000 men. The great Ajaipál had paramount power. Bisaldev brought many a monarch to his feet. Biramdev Sangráná made a great havoc among the Muhammadan ranks at Jhálwárgaṛh; he never consented to give his handsome daughter in marriage with an emperor and thus preserved, in spite of great difficulties and temptations, the honour of his house inviolate. Prithvíráj drove away Muhammad Ghori seven times to the mountains of Ghor, after having subjected him to the ignominy of wearing women's bracelets *(churis)* on his arms. When the latter again attacked Dehli, the brave Chohán died exulting on the field. You, weak in intellect, do you think that

the truthful Rájpúts will be deterred by adverse circumstances from doing what they consider to be their duty? Do you think that they fear death and destruction? Never give place to such a thought. I am a descendant of the heroic Chohán's. Rather than live to see my words fall to the ground, I will die a glorious death with my sword drawn on my bosom. I have determined and made it a point in my life never to leave undone what I am resolved upon. I will never go to you and bow down at your feet with proposals of peace, it matters not with how many furies you may be attended. If the *Ṣesh* leave supporting the earth on its broad head, if the mountains leave their fixed places and begin to move, if the waters of the Ganges flow from her mouth to the source, if the sun rise in the West and the polar star move in the sky, if the ocean violate the truth by which he his bound to keep confined within his dominions, if the *satí* who burned herself with the body of her husband rise from her ashes and begin to live together again in the world, then and yet then I will never break through my resolution. The sky may not bear myriads of stars on its broad bosom, and the beams of the morning sun hide them from the face of the earth, yet Hamír, brave Hamír, will never violate his sacred promise. I assure you, I will never let any one, be he the strongest of all mortals—a saint or a demon—to pull a hair out of Muhammad Sháh's head as long as I am alive.

"Do not forget, Emperor, the truth I point out to you—that lacs of Alá-uddíns have been turned to dust on the surface of this frail earth. Do you think yourself the only hero? Never for a moment give place to such a thought. Nothing has been, and will ever be, stable on earth. Do not blow your own trumpet, Alá-uddin. If it has pleased God to make you a monarch, you are one, and who calls you a slave? Who knows what will be your condition in the fort of Ranthambor?"

Chapter VII.

Hamír came to the temple of Mahádeva, worshipped the god in various ways, burnt incense and thus prayed:—

"I bow down at thy feet, thou Omnipotent, thou wearer of matted hair, holder of the *pinák* spear. O thou, that hast three eyes and fire burning and the moon shining on thy forehead; that hast a garland of human heads around thy neck; that hast Bhaváni on thy left side, and the Ganges murmuring on thy head, hid amidst the knots of thy hair; that hast Gauri as a part of the body, and devils and serpents attending thee—O thou whose throat is blue with poison, whose son is Ganeṣa and servant Bírbhadra, O thou mighty lord, have mercy on me, help me in this dire extremity and make me fearless now, when Alá-uddín has come at the head of

270,000 horse to fall on me and conquer my fort. I depend only on thy mercy. The sinner has his sins forgiven him by thy benign power. I have come to thee to ask thy protection. Defend the fort; defend truth and the glory of the Rájpút virtues. O thou, the lord of Umá, bless me, help me, support me and encourage me. The fort is being drowned and swept away by the mighty ocean of the Muhammadan army. Keep the honour of my words inviolate. O god, assist me that thy name may be glorified here on earth." Then Hamír closed his eyes and became lost in contemplation.

The heavens opened and a sound issued—"Hear, son, the glory of thy deeds shall remain untarnished for ever. Fight the Muhammadan forces: thou hast nothing to fear, even if the siege last for 14 years. On Saturday the eleventh after the full-moon in the month of July (the moon being on the sign Pushyá), there shall be a great final massacre. Thy name and heroism shall be immortal both here and hereafter. Draw thy sword for the glory of thy words, because such is the virtue of the Kshatriyas."

With great joy Hamír prostrated himself at the feet of the god. He was coming out of the temple, when he heard the following words: "Hear, Ráo, this is certain—if a thousand warriors of thy ranks fall on the field, they shall fall killing a lac of the infidels."

Hamír called a council of war. His friends and ministers all assembled. There were present warriors, heroes, Ráwats and formidable Bhaṛs—men who regarded their lives as pawned for the safety and cause of their liege-lord. They were not given to sensual pleasures, and, therefore, their limbs were as strong and hard as rocks. The world and the flesh had no influence on their minds. Their lips dropped honey, and they were ready to cut off their own heads for the interest of others. Their glory and heroism were sung by the minstrels. They held *jágirs* which gave to each of them an annual yield, worth a lac of Rupees. Ráo Randhír of the fort of Chhan, uncle to Hamír, was at the head of these heroes. He, having bowed to the Ráo, thus spoke, "Hamír, see my dexterity in using swords. I shall do what our uncle Kan did when he fought with the Kámdhaj Ráṭṭors of Kanauj." "Listen to what I say, my valiant uncle," replied the Ráo, "your heroism is not unknown to me. You are the defender of my fort, fort-wall, town, my forces and all that I have in my possession. Hear, I have said to the emperor, that I shall fight with him in an open field of battle; see that my words do not fall to the ground."

Hamír strengthened the defences of the fort. Large cannons were mounted on the bastions; soldiers armed with bows and arrows were seated beside the battlements. The gates were well guarded by very powerful sentinels. Every pass, every entrance, every gap was very carefully shut up, and

defended by bodies of strong heroes. Then marched the great Chohán, riding on an elephant, followed by many other warriors armed *cap à pied* each seated on his own charger. The elephants were so tall that the heads of their riders touched the sky. Such an impetuous rush they made, that it seemed as if a host of devils ran forward to fight, having been awakened from sleep. Then followed bodies of horses all brisk and fleet, well-dressed and mailed. Young and powerful heroes rode on them and began to pour down in parties. The head of the mighty Randhír was seen prominent among the Rájpút ranks. The valleys rang with the loud and thrilling sounds of trumpets and drums. Randhír, with his warriors, pressed on. The large number of horses and elephants, coming forward, looked as if the waters of an ocean rolled on sweeping everything before them.

Alá-uddín, on seeing the hostile troops before him, drawn up in battle-array, ordered, in great anger, to besiege the fort very closely. The Rájpút forces and the ranks of the Muhammadans met. Many a hero rushed hither and thither, uttering shouts of war-cries at the top of his voice. Arrows flew whizzing through the air and pierced the massive bodies of elephants, as pass numbers of enraged serpents to their dens on the sides of mountains.

There was a sharp play of swords held in determined hands. Randhír rode out in front, brandishing his steel very cleverly. Azmat Khán and Muhammad Ali, at the head of 80,000 veteran soldiers, fell upon him. The engagement was very fearful and lasted steadily for a long time. "Hold fast your bows, Muhammadan," cried out Randhír. Muhammad Ali rushed at him, furious like a tiger. While both the heroes were engaged, Azmat Khán bent his bow and shot an arrow at the breast of the Chohán, who, slightly hurt, thrust his lance on the former so cleverly that it went right through his head, and down dropped the body on the ground. "Think not, Chohán, that thou hast won the victory" exclaimed Muhammad Ali, "I shall show thee my skill in the use of swords, and the next moment thou shalt fall a prey to it." No sooner did he say the above words than his flashing sword fell on the head of Randhír. The helmet was cut off, but the wound on the head was very slight. The brave Chohán then despatched the Muhammadan by one stroke of his sword. When their brave commander fell the troops gave way. They shrank in fear. Many veterans dropped down dead on the field; sharp daggers were run through many a breast. Heads began to roll on the ground, their teeth grinding and eyes darting fire. Legs and hands were cut off, and yet the stumps fought. A panic seized the Muhammadans, and they fled away in confusion. The total loss on the Muhammadan side was a very great number of soldiers, besides Muhammad Ali and Azmat Khán, Mírs of the

emperor of Balkh, while that on the side of the Chohán was 10,000 only. The goddess Káliká danced and laughed, and her attendant she-devils feasted on the flesh and blood of the slain. All who fell on the field were translated to heaven.

When the troops fled away from the field, when "Fly away for life" was the only expression heard, the emperor burst with anger. He said "Fy! Fy! cowards, why do you leave the field? Is it for this act of shame that I allowed you the enjoyment of many comforts? Is it for this that you have eaten my salt? Now the love of life overcomes faithfulness. Come, come along to me, I shall cut you to pieces with my own hand." The scattered soldiers became united, and again they rushed to the field. Their shouts were heard to a great distance. Bádat Khán, the principal Mír of Ghaznì, bowed down to Alá-uddín. He said, "See my dexterity and military talents, Royal Master, see how I fight and kill the hostile troops one and all."

Bádat came to the field with great fury; so great were his bravery and ferocity that it seemed as if the fire of death and destruction shone forth from every pore of his body. The air resounded with the high peal of drums. Colours were unfurled. Clad in mail and armed with all the weapons of attack and defence, the Muhammadan Mír thought himself invulnerable. The enraged emperor gave orders, and a second battle was fought. Again the martial music of *sánáhis* (pipes), trumpets and drums was sounded; shouts and cheers were heard from all sides. Cannons roared, and thereby the earth shook, the waters of tanks and wells became dry, and women miscarried. Arrows flew fast in large numbers. Darkness spread over the field, so that the hands of the archers could neither be seen nor distinguished. Bádat Khán and Randhír met. They seemed as if two mighty Rudras came face to face. The Muhammadan was at the head of 20,000 soldiers who surrounded the Rájpút. The troops of the latter rode forward. Swords clashed, and the Chohán warriors, by a masterly feat of arms, failed not in cutting the bodies of their adversaries in ten thousand pieces. There was a play of sharp spears. The heroic Randhír commenced a wholesale massacre, and almost all the Muhammadans were put to the sword. With a wild hurrah, out rushed Bádat Khán and fell on the great Chohán. He raised a *guraz* (a club with a ball of steel at one end) on the head of his enemy, who shifting wisely warded off the blow by his shield. Then Randhír, furious with rage, struck Bádat Khán dead by one stroke of his sword. The head dropped down, but behold! the body rose and rushed at the Ráo, who immediately divided it into two equal parts.

The emperor became greatly sorry at the fall of Bádat Khán and that of his 20,000 men. Mihram Khán having joined his hands, thus spoke:

"Did I not tell you, that Hamír will never come to you and return you the exile, Muhammad Sháh. When he has drawn his sword against you, he will stand by his resolution; you can never get the body of the refugee. The promise of that greatest of all heroes is true, and true to the letter."

Alá-uddín became greatly displeased with the Vazir. He said "Cursed coward, do you not know my might? Do you not know that in the twinkling of an eye, I can destroy the fort of your valiant Ráo, burn him, his sons and wives, and bring the exile Muhammad Sháh trembling to my feet?" Taking a copy of the Korán in his hand, he bowed down to the great Allá. He cast his eyes from one flank to the other of the numerous host arranged on his side. Then with a secret pride he gave vent to his thoughts—"The lines of my forces are as thick and dense as dark clouds on the autumnal sky. Hamír, foolish Hamír, can expect to live only a day or two more."

The Vazir's reply.—"O Emperor, who on earth can have even a slight glimpse of futurity? A stubborn insect persistently flitters about the strongest fire, although it falls singed on the flame."

In the camp of Hamír, Randhír said,—"The emperor has come to Ranthambor, having conquered the four sides of the earth. It behoves us, therefore, to fight both day and night."

Hamír.—"Mighty uncle, at night how shall I be able to distinguish heroes from cowards? Besides, the principal virtue of the Kshatriyas lies in fighting in the presence of Súrya (the sun), Bhairav, Mahádeva, and Káliká; and the vultures do not come to the field but in day-light. I will never fight the Muhammadan forces at night, because I consider it a deception."

Two thousand large cannons were kept steadily engaged in pouring out volleys of fire towards the fort. The fearless Hamír sallied forth from his hills and committed dreadful massacre by day, while by night descended the troops of Randhír all of a sudden from the defiles and declivities of the mountains of Chhan, and brought certain destruction on the Muhammadan ranks. Thus did the two heroes cut off the heads of many Mírs and Amírs and those of many horses and elephants. The blood of the slain flowed as rivers. Ah! what a terrible sight it was to look upon.

Alá-uddín, seeing the hopeless state of things, is said to have invoked the saint Khwájá of Ajmir and the saint Mirán of Tárágaṛh in the following words: "I will go barefooted to your shrines, mighty Pírs, if you deliver the fort of Ranthambor into my hands." The latter sent nine Sayyads to his assistance. They cut off their own heads and holding them by their hands made a desperate rush at Hamír, when lo! four gods descended from

heaven—Gaṇanáth, Sambhu, Dinakar and Khethrapál. There followed a violent contest between them. Exulting and angry, they sprang on the heads of each other. Now they roared, now darkness covered the face of the earth making everything look terrible, now it rained very fast, now they rode on the clouds and exchanged angry words with one another. Now they poured down fire, now they hurled each his enemy into the air. Now the earth shook with their fury. Gaṇanáth wielded his *pinák* with great skill, and Bhairav his *mudgar*. The Pírs fell. Their bodies remained on the earth while their souls were put into prison. Here are their names: Abdál, Hassein, Rahím, Sultán Mekki, Abul Hákáni, Rassul, Jakhki Ali, Hayar and Himmat. Alá-uddín drew a heavy sigh at the sight of their bodies strangled and scattered in a forest. In a desponding tone he remarked: "Victory belongs to Hamír, alas! not to the great follower of the crescent."

Then the emperor called a council of war. The Vazir Mihram Khán thus addressed his Imperial Majesty: "Nothing now can be of any avail but one thing. Let us besiege Chhan. If the fort of Randhír fall, we shall succeed in creating a panic in that of Ranthambor. Ráo Randhír will come to you with the Sheik, and thus will the pride of Hamír fall to the ground."

Emperor.—"Then let us carry the fort Chhan at once." A *purwanna* was instantly written to Ráo Randhír.

Firman.—"Ráo, the emperor, being angry with you at your haughty conduct, has determined to besiege your fort. Take care and be humble, for his 5000 Arabic cannons are so strong that they, when fired, can split up huge mountains to pieces. Once fire flowed from their mouths as rain from clouds, at whose fearful report the lions fled from their dens in dismay. Alá-uddín the Great, with his 250,000 horse, comes in full parade to justly punish you for your pride."

Reply of Randhír.—"Do not delay, Emperor, in besieging my fort, now that your repeated efforts to take that of Ranthambor, which you boasted to capture within the shortest possible period, have gone for nothing. Be patient, Alá-uddín, I will fight with you bravely in an open field. Has India no heroes? Are her brave sons all gone that you are so over-bearing and vaunting? I have made every preparation for war. My soldiers are singing in sweet notes the marching song. Of my 31,000 troops, 10,000 heroes, gay like flowers, are promenading in the battle-field. They can defeat and scatter the forces of their enemy, being safe themselves."

The imperial troops were encamped on the plains of Chhan.

Then sallied forth the Chohán troops from the hill-tops of Chhan, headed by the warlike Randhír. On the Muhammadan side Abdul Khán

and Karim Khán were made commanders of the battle. Both the parties met. Showers of arrows fell, swords clashed, and rings were flung. Very great was the bravery displayed by the 10,000 heroes of the Chohán chief. The heads of 10,000 Habshis rolled on the ground. 500 Rájpút warriors were slain, on whose bodies sat vultures and jackals and feasted on their flesh and blood. Then, swift like a flash of lightning, Randhír, like a hungry lion, fell upon both the commanders and cut off their heads with great dexterity. A massacre ensued. The imperial troops were driven four miles behind. "Behold, emperor," exclaimed the Ráo, "see how your brave soldiers fly away. Pity their poor souls! Why do you number their days by pushing them on to the great furnace of Rájpút might?"

Randhír's letter to Alá-uddín.—"Why delay, emperor, in taking my fort? The few days, in which you said you would capture it, have passed away. Why do you not rase my fort? Shall you ever be able to do so? No, never. Why then sacrifice the lives of your poor soldiers? Though you should besiege my fort for five years, you would not succeed in pulling a stone out of it, nor out of Hamír's, if the siege were to last for twelve years."

Although an enemy, Alá-uddín could not forbear commending the military talents and prowess of Randhír. He said "Glory to Randhír, glory to his bravery. See, amidst a forest of our men, he, at the head of a few troops, rushed in and darted like lightning, carrying the palm. Let us no more fight with swords except in special cases, for in the use of swords the Rájpúts have, I am inclined to believe, no equal. Let us try to blow up the fort by planting batteries all around."

The Rájpút officers and soldiers, with one voice, said to Randhír, "Continue fighting, invincible master, we will never show the enemy our backs. Fight without fear, trusting in our faithfulness. We shall die glorying in our death, thereby glorifying the name of the Chohánas, and thus ascend that world of felicity which is far above the earth and the sun."

At the instance of Ráo Randhír, Ráo Hamír called together the Kshatriyas of thirty-six different clans. The troops assembled and seemed as numerous as clouds which overcast the sky. They stood in front, with their hands joined, and were thus addressed "Listen, ye friends, listen with attention; since we have drawn our swords against the emperor of India, we shall fight to the last drop of our blood. Come and side with us, ye who are brave, who dare sacrifice their lives for our sake. Let him who fears to die go away from our ranks."

The vassals replied—"Royal Master, we have eaten your salt, and shall eat it as long as we live. How can we in this extremity leave your cause?

We promise that we will not only defend the fort, but with hearts undaunted meet the emperor, your enemy, in an open field. However great may be the odds in his favour, we will cut his men to pieces and scatter them in flight."

Flames of fire burst forth from every hill-top, and illuminated the country to a great distance.

On the receipt of Hamír's letter, the two princes of Chitor, Khán and Balansí, proclaimed the fact of their going to Ranthambor, at which all the citizens, male and female, came and fell down at their feet, beseeching them to change their resolution, and not to sacrifice their interests for those of their uncle—Hamír. The princes replied—"Listen, ye citizens, those who are born must die, for it is so ordained by God. In this corrupt age none are immortal, and none will ever be so. If we fall in battle, we shall die in glory, and our praises will be sung by the immortal Urvaśí, the fairy-queen of heaven." The Ránis, their mothers, looked pale, but they would not yield. Having saluted their superiors, they, with 3,000 brave Ráṭṭors, 5,000 Puañrs and 8,000 Choháns, marched for Ranthambor. When they arrived, they encamped below the hills. Then they went to the fort.

Hamír gave the princes a very warm reception, embracing them tenderly. Great rejoicings were made in honour of their coming to Ranthambor. "I leave the burden of government upon you, princes," said Hamír, "take it. I leave all in your charge." "Glory to you, uncle," replied they, "for keeping the houseless under the shadow of your protection. You have thereby become famous in this world. None are to live for ever here below, but deeds, glorious deeds, are lasting monuments of men's lives. Our bodies are frail. As long as we, your slaves, are alive you need not go yourself to the field. We must fight the imperial legion and show you our skill in the art of war."

Both the brothers stood up in great excitement. Bravery and courage beamed forth from their faces, which looked like two rising suns. Their helmets and breast-plates glittered, and the spirit-stirring peal of trumpets made them restless.

"Brother Khán," exclaimed Balansí, "let us take the Muhammadans unawares, swoop down upon them at once, and cut them to pieces. We are resolved to die gloriously on the field. Ratan shall reign on the thrones of Chitor, Narwál and Gwáliar. (To Hamír), If the provisions of food fail, care not at all, uncle, for your life; go, fight the Muhammadans, commit a massacre and fall on the field of glory, but never break your word." The bold words of the princes made the heroic Ráo weep at the thought of parting with them, alas! for ever.

Princes.—"Nothing is stable in the world, nay, not even the moun-

tains, the earth and the hills. Why weep at the thought of parting, dear uncle? If we be separated from you, we are sure to meet you in yonder heaven."

The Ráo kept quiet. The two brave heroes went to the females' apartments. They bowed to Ráṇí Aṡá. All the females, including the maids of the princess burst, out a-crying. "It is time now, dear sons," said Aṡá with tears rolling down her cheeks, "when we shall rejoice to see you married." The princes laughed. They cried. "Then fasten on our heads the marriage-crowns, gracious queen, and we shall fight with greater determination." The crowns were tied to their foreheads, and holy threads wound round their arms. Then she blessed them.

Afterwards the princes entered the temple of Ṣiva. They worshipped the god and his son Gaṇeṣa; prayed to them and touched their feet.

When they returned from the temple, drums were beaten and colours unfurled. The earth and heaven echoed. They then went to the Ráo, touched his feet, and exclaimed, "We shall meet you, dear uncle, no more here on earth, but surely there in heaven. We shall die, certainly die, but never be false to the virtues of our clan. Better far to give up the love of life and kingdom, home and children, than to violate the honour of one's own words. Farewell, Chitor, farewell ye hills and fort of Ranthambor, farewell this world of woe; welcome victory, welcome glorious death, and welcome eternal life and happiness."

The princes and their train descended from the hill-fort. The beauty of the Rájpút shone forth; and their spears glistened in the sun. Energy was visible on every countenance. The god Ṣiva forgot his contemplation, and broke out into a wild fit of laughter. Many a handsome nymph and frightful *Jogini* (she-devil) descended from the air to follow the troops. Vultures and other birds, which feed on flesh, hovered along in thick numbers. Many a devil, who dwelt on land and air, moved forward to assemble there. The gods alighted for the protection of the princes and remained with them unseen and unknown. The procession came to their encampment. Drums gave the warning that within a few minutes there would be fought a terrible engagement.

Emperor.—"What rejoicings are being made in the hill-fort?"

Vazir.—"Two young princes, sons of Hamír's younger brother, have come to fight with us. They are strong-limbed, fully armed, blood-thirsty and desperate. Both wear crowns of victory on their foreheads."

Emperor.—"Then those of our ranks who can fight with a lion can venture to meet the princes face to face."

Vazir.—"On our side the Mírs of Arabia are unequalled in bravery and other martial talents. Their teeth are like those of a monkey, eyes like

cats, bodies like monsters, and ears like a winnowing fan. Their ancestors captured Prithvíráj and took him to Ghazni. They can easily seize the young princes and bring them to your feet."

The emperor thanked the Vazir for his valuable advice. Instantly he sent for Mír Zamál Khán.

Emperor.—"Brave Mír, I leave the present work entirely with you. Your ancestors imprisoned the great Prithvíráj Chohán. So go you to the Rájpút ranks and capture the two princes of Chaturang, newly come to the assistance of Hamír; but see you do not kill them."

Mír Zamál Khán twisted his whiskers, touched the feet of the emperor and said, "Gracious Majesty, the work you have been pleased to give me is beneath my dignity as a warrior. What a trifle is to me the capture of two young boys. I can bring all the Hindús pinioned to your feet, cut all in pieces if they venture to make head against me, and level their bodies in the dust." He bowed before Alá-uddín.

The Rájpúts and the Muhammadans marched in great excitement. They came face to face. Then all of a sudden, like a flash of lightning, out rushed the Mír of Arabia. On both sides the warlike peal of martial music stirred up all to action. The blue and the white colours were unfurled. There was a clashing of swords for hours. The battle raged very furiously. A steady fire of matchlocks was kept up. There was also a brisk play of lances. The bold, warlike spearsmen managed their spears with so great skill that every one of them stabbed two soldiers with one stroke of his weapon. Never did a sword fail in cutting the head, upon which it had been struck, clean out of the shoulders. A wild laughter separated the lips of the goddess Káliká. There was a continuous raining of heads. Here fell a hand, there an arm, here some fingers, there some palms, here dropped the head, there with vehemence rose the body of many a warrior. Then with a shout, which thrilled every heart, outrushed Zamál the Mír of Arabia, while from the Rájput side rode forth the prince Kánh to meet him. The Muhammadan shot an arrow which pierced the horse of the Rájpút. The horse dropped dead, and instantly a second horse was mounted. The fighting continued with unabated fury. Kánh drove a lance into the body of his adversary, who for a moment fell senseless on the ground. With redoubled energy and violence the Muhammadan was on his legs again. The brave feats of arms of both the warriors were seen with admiration by the troops of both sides. At last the wise Hamír, thinking that the old Muhammadan was more than a match for the young Hindús, called Saukhdhar. "Go you, Saukhdhar, the bravest of all heroes, skilful in the art of war, go at once to the field to aid the Chitor princes. They are very heroic, but very young, and their antagonist is a monster in

human shape. It is written that the woman, who, having determined to be burned alive with the body of her husband, shrinks back in fear at the sight of fire, is condemned in this world and loses her place in heaven. You know that nothing is immortal but the soul. You are wise, and so I need not instruct you in these well known rules. Glorious are they who conquer both this world and the world to come. Your mother bore in you a hero; think of these things and fight. Go with all speed to the field and assist the young princes."

With a wild hurrah rode forth Saukhdhar as swiftly as an arrow. The troops of Zamál Khán were also reinforced by a body of 200,000 Arabian soldiers. Cannons boomed, and balls rushed out, uplifting many a horse and elephant in the air. Swords clashed, and heroes hollood. Heads dropped on the muddy earth, muddy by the incessant shedding of blood.

"Fight, fight my brave soldiers," exclaimed Kánh at the top of his voice, "fight the Muhummadans, and be glorious; fight to the last drop of your blood that your name may be noised here below, and salvation won there above. See, none is able to live for ever in this frail world." The prince Bálan spurred his elephant to meet Zamál Kánh. All of a sudden he struck the Mír with a sword, which cut off the helmet and wounded his head. Again a combat ensued. The dagger of Bálan went right through the heart of Zamál, who fell down dead on the ground. Then outrushed his attendants, and they succeeded in killing the prince. Kánh made a desperate rush at the enemy's line and killed all he could; but his days were also numbered. With wild fury sprang amidst the ranks the brave Saukhdhar. Many Arabians were put to the sword, and more were stabbed. From every wound blood issued in jets and flowed in torrents. The reeking weapons flashed fire, and heads rolled hither and thither on the ground. The beheaded rose with vehemence and rushed at any that chanced to fall within their grasp. The victory belonged to the Rájpúts, and the remainder of the Arab forces fled away in confusion. Many handsome nymphs descended from heaven and carried above the two brave princes and the mighty warrior Saukhdhar. On the Rájpút side the loss was 8000 Chohán, 3000 Ráṭṭors, and 5000 Puañrs—16,000 in all, and three great heroes; while that on the Muhammadan side was 70,000 foot, 5000 horse and elephant—75,000 in all, and Zamál Khán, the Mír of Arabia.

Ráo Randhír, with his sword drawn, spoke face to face with Alá-uddín. "O Emperor, the time has come when my fort shall be destroyed. Hear, with attention, Hamír will never break through his resolution. Know this as truth, and nothing but truth. Consider very maturely, and then act. The fort of Ranthambor will never come into your possession. Leave your pride therefore. It behoves you to do so."

"Why not," replied Alá-uddín, "make Hamír understand what I say? Why extend the flame of war which feeds on many Rájpúts and Muhammadans? He may reign in the territories of Ranthambor. I am not averse to that, if he will only bring the exile Muhummad Sháh to my feet: else sure as my name is Alá-uddín I will curb his pride. If I break through my resolution while Hamír is glorying in the firmness of his, I shall never be worthy the name of 'Emperor.' It is certain that of two contending parties one comes off the gainer. Listen, Randhír, listen to my word. I know every creek and corner of the dominions of Hamír. By whose orders has he been authorized to enjoy to this day the possession of the four forts—Ranthambor, Chitor, Narwál and Gwáliar? He has never served me; neither has he ever so far condescended as to make me an obeisance. Mountains may move, the sun may rise in the West, and many such other unnatural things might happen, but I, mighty Alá-uddín, will never return to Delhi without the exile. If I do so, I shall be a coward and emphatically the greatest of all cowards, not worthy to sit on an imperial throne." (Turning to his ranks), "Press hard the seige, my brave warriors, and carry the fort."

Randhír bade farewell to the fort. He gave alms to the Bráhmaṇs, bowed down his head before the sun and joined his hands as if he awaited his orders. Then, bending at the name of Hamír, he rushed forth very furiously at the head of his heroes, warriors and soldiers. His 10,000 veterans were in the front line. Then followed the horsemen, the riders upon elephants. Cannons boomed from the fort. Hurrah! hurrah! hurrah! shouted the Chohán troops. Then, swift as flashes of lightning, they fell upon the Muhammadan ranks, as fell the mighty Rághava upon the *rákshasas* of Ceylon. The heroes looked ferocious in anger. Steady in fight, all of them vowed to abide by the virtues of their clans. There was a standing cannon fire from both sides. The fort and its walls were breached. On the earth it rained terrible showers of flame. Dark clouds, produced by the smoke, hung on the atmosphere. Wherever there was a circle of men, shots came in that direction.

"Come, fight with us, ye Muhammadan wrestlers, if any of you be worthy the name," cried out the brave veterans of Randhír, elated with pride. They fell to wrestling. The battle raged, horse fought with horse, foot with foot, and elephant with elephant. There was an incessant shower of shots. Some lost their bodies, while others their heads, some their hands, while others their legs. So profound was the darkness spread over the field, that it could not be known whether it was day or night. Arrows flew fast piercing many a horse and elephant. The strong steel mail was no protection from their sharp points. Some soldiers were stabbed by the violent strokes of

daggers. From the wounds caused by them the blood flowed in torrents as from roofs the rain water flows in the month of August. Numberless heads dropped on the field and rolled like so many water-melons. The Muhammadan forces shrank back. At the brave feat of arms of Randhír, even the Emperor, although an enemy, could not forbear to exclaim, "Praise to you, praise to your valour, mighty warrior," and at the same time, looking at his dispersed troops, he frowned and then rebuked them, saying, "Why fly, ye cowards, from the field, while I am still alive?"

Then bowed down the Bakhshi of the imperial legion. "Make me the commander of the battle," said he exulting, "and I will with 100,000 Rumánians fight the Hindús and scatter them as flakes of cotton before the wind." With a drawn sword in his hand he rushed out at the command of Alá-uddín. Randhír, holding a lance, rode forward. The warriors came face to face. The Muhammadan aimed a *guraz* (an iron club) at the head of the Chohán. The latter warded off the blow with his massive shield. Then a lance was darted at the former. It pierced his body and that of his horse too, and the next moment he fell senseless on the field. Fifty Mírs rushed forward, but all of them met the same fate. Then came out a fierce Mír of Rúm. A fearful engagement raged. A dagger was run through his breast down to the hilt; he dropped down, and in a few minutes all his struggles subsided in the stillness of death. The sword of a Balkhán fell on the shoulder of the Ráo. The throat was cut through, but behold the body rose with vehemence. It made a rush at the murderer. It got him within its grasp and pressed him heavily. Down they dropped and instantly the dagger of the Moslim went right through his breast. 100,000 Rumánians fell. The body of the brave Chohán lay on the field like a tall palm, with blood gushing out of the neck. The Joginis (she-devils) regaled themselves with his blood, filled their cups, drained them, and danced.*

On Saturday the 9th before the full-moon in the month of Chait, 30,000 Rájpúts fell for the defence of the fort, and 10,000 women burned themselves on pyres with their husbands. The loss on the Muhammadan side was thousands of Muhammadan soldiers, including the mighty Bakhshi, who held a *jagir* of 5 lacs, and other officers, holding from 10 to 20,000 Rupees' worth of land.

When the intelligence of the capture of the fort of Chohán by Alá-uddín reached Hamír, he became the more resolved to fight the Musalmán forces. He exclaimed, "Glory to you, uncle, glory to your uncommon bravery. The death of a Kshatriya is both a glory and a blessing. You have done, mighty hero, what uncle Kan did for Prithvíráj at the battles

* It was a belief among the Rájpúts that Joginis like the blood of mighty heroes.

of Kanauj." He felt glad and sorry at intervals: glad at the heroic death of his uncle, and sorry at the loss of so great an ally. He continued, "You have killed 60 elephants, 200,000 horses and 26 Amírs; glory to you for ever, invincible hero of heroes."

So numerous were the men slain and wounded in the Musalmán ranks, that it took Alá-uddín full six months to have them buried one by one.

"Imperial Majesty," said a herald to Alá-uddín, "it is said that Mahádeva, the lord of tigers, is Hamír's ally. He has blessed the brave Ráo, telling him, 'Fear not, child, your fort can never be taken, even if the siege last for fourteen years.'"

On the third day after the full-moon in the month of Asaj (September), the emperor marched to break down all the temples at Alanpur. On this, there followed a great commotion among the devils of Mahádeva. Sixty-four Joginís and fifty-four Bhairavs (he-devils), armed with tridents and *khappars* (cups for holding blood) danced a horrible dance. They, with Sheoji at their head, rushed at Alá-uddín, playing on *deheru* and singing through *sankh* (shells) many fearful, soul-stirring, martial airs. A Bhairav was close at the heels of the Emperor, exclaiming: "I will slay thee, wretch, knock thy head and make a grand feast of thy blood." The terrified emperor fled with haste, praying, "Defend me, Allá, defend me now that I am about to be eaten up by this dreadful monster." Then the goddess S'aktí, taking her various shapes with bows, arrows, rings, swords, daggers and spears in her hands, and the gods armed with *hal*, *mushal*, *ankus*, *mudgar*, each his own weapon, fell on the Musalmán troops. 100,000 of the infidels fell. Gaṇeṣa bewildered the brains of many Kháns, Mírs and Amírs who began to cut off the heads of their friends, mistaking them for foes. All was confusion. Heaps upon heaps of dead bodies lay here and there and made the roads quite impassable. Ah! what a dreadful sight it was to look upon! Seven Mírs, being totally hopeless of victory, went away from the imperial ranks. The Emperor was struck with great astonishment at seeing the corpses of 200,000 of his forces, and those of two very able chiefs Himmat Bahádur and Ali Khán among them. He thus thought within himself—"What destroyer of gods is ever happy? We hear that Hari killed hundreds of Asurs or devils in ancient times. Man can match with man, gods with gods, and devils with devils." He called many Bráhmaṇs very eagerly, and told them to do whatever they could in the way of appeasing the anger of the incensed gods.

He gave orders to march from Alanpur with all expedition.

Emperor.—"Although I am Hamír's enemy, I cannot but admire the way in which his men fight. They are quite at home with the sword. While many in our ranks fell, they fought very manfully, fearing none and,

glorying in death. Their heroic contempt of life is the grand secret of their success."

Mihram Khán.—"Do not be sorry, Emperor, although you have come in spite of my prohibition. Be patient and do not lose heart. Press hard the siege. Hamír shall no more be able to hold out."

Chapter VIII.

The imperial tents were removed from Alanpur and pitched on a hill at Ráng. Having taken a view of the fort of Ranthambor through a telescope, the emperor consulted his vassals and ministers, and sent a herald to Hamír. He said, "Tell, herald, tell Hamír to deliver into my hands the exile Muhammad Sháh and to come and fall down at my feet."

When the Ráo heard this message his blood boiled. He replied, "I care not at all for your words, Emperor, I care not for them. Hamír is not a child, that threats and flatteries can move him even an inch from his resolution. So far from giving you back the Sheik Muhammad Sháh, I will not give you even any of the birds and beasts of Ranthambor. The heads of such valiant heroes as Baldev, Ranjit and Randhír Singh have I sacrificed on the field. What! to give you back our refugee. Did you not feel ashamed to write me the *firman?*" (To the herald.) "Go and give the emperor what I have written, and come no more even if you be ordered to do so by your master. Take as much gold as you wish for. Tell Alá-uddín that he is my enemy, and not a friend, and so where is the use of such a *firman*. Tell him that I will never, never deliver into his hands his exile Muhammad Sháh. Tell him that I have resolved never to meet him but on the bloody field of battle."

"How foolish is Hamír," remarked Alá-uddín, when he was informed of all particulars by the herald. According to the advice of the Vazir Mehram Khán, he secured the possession of the hill of Ráng. Large cannons were mounted upon it, and their mouths directed towards the fort. "Let us blow up the cannon which lies yonder on a bastion of the fort," said the emperor to his Vazir.

A monstrous cannon was fired, but the Ráo's cannon could not be silenced. When Hamír heard this intelligence, he ran forward to the cannon. He saw it perfectly safe. "Is there any one among my cannoniers who can burst the largest cannon mounted on Ráng! If any, I shall reward him amply and make him very rich." One stepped forward, and, having bowed to the Ráo, fired his cannon, and the next moment the imperial cannon was broken to pieces.

Emperor.—"What means are to be taken now for the capture of the fort?"

Mihram Khán.—"Hear, your Majesty, there is a tank outside the walls of the fort which, if bridged over, can give a passage direct to the fort."

Every arrangement was made for the building of a dam, and it was finished after prodigious labour.

"We can no longer defend the fort" said Hamír drawing a heavy sigh. "It is lost, alas! the dear fort of my father is lost." In the dead of the night Padam Ságar in the guise of a man appeared to him in his dreams. "Do not be sorry, my bold son,"* said he "my waters are fed by springs issuing forth from 7 oceans and 900 rivers. Be sure I will overflow the dam with the greatest expedition. Be happy and live secure within your fort." At break of day, Hamír saw to his astonishment a vast sheet of water rolling over the site of the erected dam. The emperor felt greatly disheartened. He said in despair: "Alas, the fort baffles all our attempts."

Great rejoicings were held within the fort. There was dancing in the *darbár* of Hamír. Chandrakalá, a fascinating dancing-girl, the harmonious *mridang*, *bina* (flutes), *shitar sánáyi*, *khanjuri*, *kartal*, *srimádal*, *sur*, *jaltarang* and such other musical instruments were bewitching the heart of every one of the audience. Chandrakalá had perfect knowledge of 6 Rágas and 36 Ráginis. The following airs were being sung. (Here follow a list of the tunes which we omit.) The Ráo was sitting in state reclining on his pillow, and *chamars* were being fanned about him.

When Alá-uddín saw this pomp and splendour of Hamír, his heart was cut to the core. He said "Lo! Hamír is enjoying pleasures like the rich Indra of heaven. He does not break through his resolution and meet with me, neither does he give me the Sheik, nor understand the consequences of his inveterate pride. See, how he laughs with the dancing-girl who darts quick glances at him, while she cares not at all for me. When the music calls her for dancing, she bows her head to the Ráo, while she shows her heels to me. She insults me very greatly. See, how she laughs and makes her feet as if she would kick me. Is there any one among my archers who, by shooting her, could curb her pride and that of her master? I would give a very handsome prize to that hero." Mír Gabru joined his hands and prayed, "It is not becoming for heroes, oh mighty Emperor, to hurt a woman." "Do not shoot her dead, noble Mír," replied Alá-uddín "but wound her foot." Fast flew the arrow of Mír Gabru whizzing through the air. It pierced a foot of Chandrakalá and fell in the midst of the Chohán Council.

All the audience were struck dumb with surprise. Hamír looked dejected and became full of cares. "Singular!" he remarked. "How can an arrow come over such a distance? Who is the archer? a saint indeed." He looked around in confusion and was lost in astonishment. In utter

* Padam Ságar was a large tank inside the fort of Ranthambor.

hopelessness, he gasped: "How many such skilful saints are there in the ranks of Alá-uddín?" "Do not be alarmed, mighty Ráo," said Muhammad Sháh. "I know the archer, he is my younger brother: none amongst the troops of Alá-uddín can equal him in archery. Devotion can never be made but by a devotee, neither can heroism be displayed but by a hero. May it please you to order me, and this very moment the head of the emperor shall I pierce, sitting as I am in this place. All your troubles will be over and his troops dispersed." Hamír replied, smiling, "Never be guilty of regicide, great hero, for an emperor, whatever his merits may be, is next to God. Shoot away the state umbrella which is put up above his head." The swift-winged arrow of Muhammad Sháh shot the umbrella with such a force that it fell on the ground. An *Analpank's* (eagle's) keen eyes mistook it (umbrella) for an elephant. The bird swooped down upon it and was disappointed.

The Vazir Mihram Khán having joined his hands, said to the emperor, "Praise be to God that your life has been saved owing to the consideration of eating your salt in former years. Be sure that if the skilful archer shoot a second arrow, it will be aimed at your life. How can that fort be captured wherein lives such an expert hero? As a serpent that has caught a mole is on the two horns of a dilemma: if it swallows it, it dies, and if it vomits the part eaten, it becomes blind. Such, exactly such has been your case, imperial Majesty. I hear that the heroic Muhammad Sháh asks for orders daily to shoot you dead, but the kind Hamír does not consent to do so. If he be ever given orders, he will put you in fetters, set his protector on the throne of Dehli and proclaim his rule there. It behoves you, therefore, to leave your determination and go back to the capital safe and sound, with your head on your shoulders. On the other hand, if Hamír be victorious and you fly away from here, your honour will be greatly hurt."

The disappointed emperor, although very angry, had to withdraw his camp backwards to Mullarná.

Chapter IX.

Sarjan Sháh, a *baniá* (merchant) of the Sharaoji sect of Buddhists, made up his mind to avenge the death of his father. "The blood of my father cries out 'Vengeance,'" said he, "and so I must forthwith go to the imperial camp and by any means possible give Alá-uddín the possession of the fort." He presented five mohurs to the emperor and bowed down at his feet. He then joined his hands and thus addressed his Majesty: "I will enable you, mighty monarch, to capture the fort. Only promise to give me in return the territory of Randhír."

The emperor replied, smiling, "Come forward, dear Seṭh,* I will give you not only the Ráj of Randhír, but that of Hamír. I will make you a great *Umráo*." Sarjan took an oath by chewing a betel-leaf and attached himself privately to the cause of Alá-uddín, who removed his tents and pitched them on his former position near the fort.

The false mind of Sarjan devised a good plan. In the dead of the night, he managed with the greatest secrecy to throw dry hides into the deep under-ground stores of grain named *Járá* and *Bhórá*. At break of day he came to the *darbár* of Hamír and with a profound bow said to the Ráo: "My lord, we are really in a great extremity. The supply of provision has failed. The only resource now left us is to meet with the emperor and make friends with him." Hamír was at first indifferent to what he said, but when Sarjan repeatedly pressed his point, he could no longer keep his passion within bounds. His eye-balls darted fire. He roared, "Begone, vile coward, begone from my sight. Dost thou propose to shake my resolution? Understand, wretch, if I bow down my head at the feet of the emperor, my mother will be ashamed of having borne me ten months in her womb." He softened and then continued, "What is the motive of thy request? If I go to Alá-uddín with proposals of peace, my meeting with him will go hard against me and against my virtues as a Rájpút. Listen, thou fool, the basest of all mortals, mean and timid, listen; I am a Kshatriya, and if I break through my resolution, I shall no more be worthy of being called by that glorious name. How do you know that our stores are empty?" "If it please you, lord," replied Sarjan, "to go to the stores, you will see with your own eyes the reality of what I speak." Then he took Hamír to the stores and threw stones into them. How great was the Ráo's disappointment to hear them resound. He was now convinced of the truth of Sarjan's words and could not find out that the real cause of the reverberation were the hides, thrown some hours ago by his perfidious store-keeper.

Seeing the Ráo very sad, Muhammad Sháh with joined hands, thus prayed, "Do not be sorry, my generous patron and protector. Permit me, I humbly implore you, to permit me to go to the presence of Alá-uddín. The moment he will get me, he will, I have no doubt, march back for his capital. You have given me house and have suffered so much. Do not stake your life and throne, Ráo, but reign secure in your dominions. Wherever I shall go, your praises shall be on my lips for evermore."

Hamír replied, smiling, "What on earth is stable, Sheik? How can a being endowed with reason desire for a thing which, taken at its utmost

* Seth is a title of respect given to a wealthy merchant.

length, is but frail and transient. Glorious actions outlive their doers. I have drawn my sword against Alá-uddín for the honour of my promise. Let me die a glorious death. There are many friends in prosperity, but in adversity very few. Know that the firmness of Hamír, the pride and stubbornness of Rávaṇa, the truth of Rájá Harischandra, and the skilful archery of Arjún are unequalled in their potency, superior to the fear of death, to the love of life and kingdom. Is death to be feared when it brings an endless glory both here and hereafter? Shall I break through my resolution and thereby be meaner than the tiny *chakar* which picks up fire and never refrains, although its bill is burnt to ashes?"

At night-fall, Sarjan Sháh went in haste to the emperor's camp, his countenance beaming with joy. Having joined his hands and bowed down, he informed his Majesty of the success of his device. He said "The supply of grain is still large enough to last twelve years more. Now the fort is yours, its strength of position and Rájpút bravery will avail it nothing. It is yours, now, emphatically yours. May it please you to demand of Hamír (1) Chandrakalá the dancing-girl, (2) Dewal Kimari (the virgin daughter of Hamír), (3) Paresh the philosopher's stone, (4) Muhammad Sháh the exile.

A *firman* containing the above demands was instantly written and sent to the Ráo with an order for prompt execution.

The emperor's *firman* made Hamír's blood boil. He wrote, "I care not at all for you, Alá-uddín. As long as Hamír's head is on his shoulders, he will never allow you to get any of your demands. Take care, villain, take care, beware of your life, otherwise you are a dead man, and the throne of Dehli is without its emperor. Send me without delay (1) Begum Chimná (the favourite queen of Alá-uddín), (2) Chintámani (a philosopher's stone), and (3) the four devils who are at your command. Send them, for so the great Hamír demands of you."

"Where lies the truth, knave," said Alá-uddín to Sarjan Sháh on receiving Hamír's reply, "where lies the truth of thy abject flatteries?"

Sarjan.—"Wait, and you will see how things go on within the fort."

Chapter X.

Sorry and crest-fallen, Hamír went to the zenana. The princess Áṣá stood up, bowed down her head, joined her hands and anxiously inquired, "What ails you, lord?" "Noble queen," said he with a heavy sigh, "our provision has fallen short. What is to be done now? what means to be taken in this dire extremity? Shall I give the Sheikh back and break my word? Alas! the very thought stings me to death." "Never do so," replied the Ráni in a firm and decided tone. "With heroism unequalled, you the

great Ráo, have fought for twelve years and many times driven the emperor from the wall. Who has put such a vile idea in your head? What accursed devil has got possession of you that you are uttering such base words? Understand, my lord, that the greatest glory of man lies in speaking truth and standing by it at any cost. It matters not whether his body be severed to pieces, wealth lost and brothers, sons and wife sacrificed. Know that wealth and kingdom are for a few days only, while glory lasts for ever. Fight manfully to the last and keep the glory of your word intact. See, Daṣaratha was bound by a promise which he had given to his bewitching Kaikayí, and so he was obliged to banish his dearest Ráma, whose separation broke his heart and he sank and at last succumbed. What is fated to be must happen, and you can never avert it. Consider, Mahá Ráo, Muhammad Sháh cannot come twice to our door, neither can Alá-uddín twice fall on the fort. If a man fear death, is he worthy to be called a Rájpút? If you break through your resolution, your fatherland Ajmir, the seat of your heroic ancestors, will be ashamed of you. Sacrifice your throne, life and fort, but never give our refugee back."

"See, Ráo where is the pious Jagdev Puañr, who cut off his own head and offered it to his tutelary goddess? Where are the learned Vikram and Bhoj, who relieved the distress of the poor? Where is the generous Karan who used to give in charity every morning, on rising from his bed, one *bhar* (weight) and a quarter of gold? Where are all these monarchs? Alas! they are all gone, all swept away by the grim-looking sweeper, death. None can escape from his all-grasping hand, neither the holy sages, nor the emperors, nay not even the gods. There have been many Chakravartí (paramount) rájás on the surface of the earth, whose sway extended to the shores of oceans, but where are they? All lost in the deep abyss of time. Wealth, youth and the condition of man do not ever remain the same. The moon even is subject to change. She wanes to nothingness and again waxes to her fulness."

"You cannot leave the Sheikh, because you have promised him safety. Abide by your word and resolution and never move from it and be cowed by adverse circumstances. The final massacre, as foretold by Ṣiva, is at hand. Fight, fight with the Muhammadan odds, holding your sword with a more determined hand. Be regardless of your life and interests. Birth, death and union come from God. None born in this world can be immortal. That which grows must perish, is a universal law of nature which no power can annul. Nothing is stable, neither man nor tree, neither mountain nor village. You have reigned over the territory of Ranthambor as long as your virtues enabled you to do so. Where is Ráo Jait, your father, who laid the foundation of the fort? Where is your grandfather

Sur Singh? Where is the valiant Prithivráj who imprisoned Muhammad Gori? Think on all these things, Maha Ráo; none can undo the decree of fate. Union and separation go hand in hand." Full of emotion she cried out, "We must now part, dear husband, we must now part from each other!"

Hamír's reply.—"Glory to you, jewel of women, and glory to your ancestors. Is there any other woman on the face of the earth who can say such free and stimulating words? If I deliver the Sheik into the hands of Alá-uddín, it will leave a foul stigma on my race. Keep your honour inviolate, commit a massacre within the fort, and die if you see blue colours come. I have tried you and found you equal to every emergency, and fit to glorify the virtues of the Kshatriyas. You are very firm in your resolution, noble princess, and I have confidence in your words."

"Why do you doubt, lord," said Ásá angrily, "why do you doubt our chastity? Need I tell you that we do not look even at the face of any other man? Can we go with others and be living when your fort is taken, and you killed? Let us perish first, that you may have confidence in our chastity in your dying moments."

Hamír.—"I do not doubt your chastity, noble queen. I know you are a flower of female virtues. Listen to my request. Wait till you see the issue of the next battle."

Hamír gave alms to all the Bráhmans and minstrels of his town. To do honour to the virtues of the Kshatriyas, he engrossed his mind and drove away the thoughts of self-interest which bind us to the world. He felt greatly affected. He bade adieu to his wife, went to the *darbár* and called a council of his officers, soldiers and ministers.

"Listen, brave Chaturang," said he, "look after Ratan Singh, now that he will be fatherless. You are wise and so I leave everything entirely to your discretion. Keep under your protection my servants and others who will go to you, strengthen the fort of Chitor and rule over your *ráj* with a golden sceptre. The virtues of a king are specially four—forbearance, courage, scrutiny and justice. Follow them, because none can be a good ruler without them."

Chaturang.—"I will never leave you, Ráo; if you live, I will live; if you die the death of glory, why am I to be deprived of it?"

Hamír.—"Your life is specially necessary, Chaturang. See, where will our subjects go to, when they shall be, as a matter of course, oppressed by the Muhammadans? To Chitor certainly. There will the inhabitants of Ranthambor flee to live in peace and plenty."

Chaturang Mori and the prince Ratan marched for Chitor, accompanied by a strong guard of 5000 Rájpúts.

Chapter XI.

Hamír assembled the remainder of his forces in a grand *darbár* and thus spoke : "My friends, if a man live, he will continue enjoying the pleasures of the world, and if he fall in glory on the battle-field, he will be translated to heaven. What do you prefer, my brave warriors? the enjoyment of the world, or the enjoyment of everlasting happiness? if the former, then do not come to me; if the latter, then make yourselves ready to fight the emperor."

Muhammad Sháh rose from the council and went with haste to his palace. He drew a sword and cut off the heads of his dearest relatives, his own kith and kin, even his own flesh and blood, lest Alá-úddín should insult them after his death. Soon afterwards he hastened to Hamír. In vain did he struggle to repress his feelings. Tears rolled down his cheeks, when he stood before the Ráo and informed him of the massacre.

Hamír said—"Do not be sorry, Muhammad Sháh; nothing is lasting in this world; none can escape from the jaws of death. In the various transmigrations which a man goes through, he remains subject to that grim monster. There is none on the surface of the earth who wishes his death, but would gladly extend his days. The death of a *Satí*, that of a hero, and that of a virtuous man are truly glorious and productive of much good."

(Turning to his Omráo.) "Wear clothes dyed with saffron, my vassals, because such a golden opportunity of attaining salvation and glorifying the names of our noble clans will not twice present itself. I, Ráo of Ranthambor, intend dying on the battle-field and abiding for ever at the feet of our Mahádeo. Alá-uddín cannot fall twice on our fort. I will distribute 1000 cows among the poor and fasten the *mor*, the crown of marriage, to my forehead."

Drums were beaten, and at their sound the Chohán colours were unfurled. Joy and the extreme thirst for glory knew no bounds and could not be contained in the hearts of the Ráo, his officers and soldiers. 5000 able Rájpúts were kept for the defence of the fort, and 80,000 became ready to fight the Muhammadans on the open field. None loved their lives and interests, and all were impatient of delay in rushing at their enemy. Here are the names of some of the thirty-six clans to which his vassals and soldiers belonged.*

Then went to arm himself the brave Ráo Hamír, the hero of minstrels'

* Kámadhaj, Karam, Gaur, Tumár, Parihár, Púraj, Pandar, Chohán, Jadav, Gohil, Gehlot, Sagar, Puañr, and Bhils with Bhoj at their head.

songs, the defender of the glory of the Rájpút power, very skilful in the art of war, benevolent, beautiful, strong-limbed and unwearied in fighting, even though he should be engaged continuously both day and night and wounded in every part of the body, for the sake of keeping the honour of the virtues of his illustrious fathers. His vassals went each to his tent to put on armour. They were so many lions in battle, no danger could daunt them: no obstacle, no difficulty, however great it might be, could move them in the least from their deliberate resolution. Their foreheads were smeared with streaks of the red sandal. With the names of the great *Súrya* on their lips they began to prance and rush like athletes. All were intent and resolved on doing something very terrible, they bathed, gave gifts of cows and gold to the Bráhmaṇs, and worshipped the Sun, Ṣiva and Vishṇu. The honour of the virtues of the Kshatriyas occupied their minds and made them glad and exulting. They were descended of noble ancestors whose glorious actions are the subjects of many a minstrel's songs. Elated with pride, with their heads erect, and energy beaming forth from their countenances, they made themselves ready to march with Hamír. They were steady in fight, regardless of life and interest, very charitable, brave, noble-minded, immovable from their resolution, and devoted to the worship of Hara.

Very brisk, active, fleet horses, well-caparisoned and guarded from head to foot from the weapons of enemies, were given each to his competent rider. 16,000 horses were equipped, of which 5000 were *Turkí*, good at trotting, and 11,000 mild and well-trained *Tájí*. All were of noble breed and very beautiful, catching the eyes of even a monarch. Their saddles were covered with ornamental embroidery and brilliant diamonds. Bunches of lace were upon their heads. Pairs of *chamar* hung by their sides, hiding the legs of the riders. Their necks were adorned with garlands of pearls, their manes were braided and their saddlery was made of rich silk and velvet. They seemed a thick flight of locusts. They were swifter than the wind. When they pressed their hoofs on the ground, fire came out instantly. They used to go through water as easily and swiftly as on the dry land. Riding on a horse of such mettle, a tolerable huntsman could put his bow around the neck of a deer while running fast in a jungle, and shoot a bird while in rapid motion. Each of these steeds was got for an equal weight of gold and diamonds.

The *Katchi* horses fled after the birds, the *Iráki* were very patient and and mild, the *Kandáhári* very beautiful, the *Kábuli* very attractive, dressed in silk and satin saddlery, the *Kátiwári* very fleet and nimble, and the *Arabi* could be compared with elephants.

The horses were divided into various groups according to their colours. 500 elephants, whose bodies were like mountains and whose roar like the peal

of thunder, were taken with the Chohán army. The drivers could not control them but by charms. At first they went to their feet, bowed to them, and then unloosened their chains, but all their endeavours could not make them move. Then they amused them in various ways. They bathed them and rubbed their bodies with oil and vermilion. The moon was painted upon their foreheads. The red streaks of vermilion looked like flashes of lightning, dancing amidst the clouds of the wet season. *Haudás* were mounted upon them. When they, fierce and frantic with rage, rushed out, it seemed as if large masses of dark clouds came on rolling in the air and striking each other. Their huge tusks looked like herons flying about on a rainy day against sombre clouds. The exudation from their temples was like drops of rain. Massive shields were fastened to their heads. With an impetuous rush they marched as if the grim monarch of death ran forward to seize his victim. Men with discuses, arrows and pointed sticks ran all about them. They were spurred on by the pricking of goads. Sometimes they would stop in the way, and nothing could move them. Little drums were then sounded, and their sweet and soft strains induced them to proceed. The *chámars*, fanned on the riders, glittered in the sun.

All the chief Rájpút warriors bowed down to Hamír, who instructed them in various ways.

The heroes as well as celestial nymphs became elated with joy. The former put on their breastplates, while the latter their corsets. The former wore helmets, while the latter drew their veils on their heads. The former wore weapons of attack and defence, while the latter ornaments of diamonds. The former took their swords, while the latter applied unction to their eyes. The former put on their shields, while the latter their earrings. The former took their daggers, while the latter pressed the *tilak* on their foreheads. The former took betel, while the latter applied *chup* (a kind of golden teeth-ornaments) to their teeth. The former bent their bows and pulled the strings, while the latter darted sidelong glances. The former took knives in their hands, while the latter coloured theirs with myrtle. The former took up their spears, while the latter wreaths of flowers. The former bound their turbans tight with pieces of rich silk, while the latter pinned jewelled lockets *(shishful)* on their foreheads. The former pranced and leaped with exultation, while the latter displayed their fascinating manners. The former wore *sheli* (silken threads worn on the neck like the sacred thread of investiture), the latter their necklaces. The former smeared their foreheads with streaks of the sandal, while the latter combed their hair. The former took in their hand the *tulsi* rosaries, while the latter handled garlands of flowers. The former spurred their horses, while the latter drove their cars on the aerial way.

The elephants were ranged foremost, then followed the horses with flying colours. There was a peal of trumpets, drums, cow-mouthed pipes, *chang* and *sánáyi*. The minstrels went on singing praises of the glorious exploits of the Chohán and accounts of the Rájpút chivalry, thereby inflaming the minds of all the warriors with an eagerness of displaying their military talents and becoming illustrious for ever, both here and hereafter. Very swift camels followed the troops of Hamír for the speedy despatch of messages.

Many cannons were taken to the front of the army. They were painted with vermilion. Their muzzles, with red colours streaming on them, seemed as if many terrible monarchs of death had opened their mouths and were showing their tongues. Sometimes the cannons would stop in the way, when wine and mutton were offered to them, and immediately they moved on. Matchlocks, small guns and several mitrailleuses,* followed in their wake.

At the singing of the martial air of *sindhu* all the troops set out, and celestial nymphs ran forward with garlands of flowers in their hands.

On the Muhammadan side all the Kháns and Umráos made good preparations for the capture of the fort of Ranthambor.

The two parties met. Brave and warlike heroes rushed forward from both sides and came face to face. Each of them was a terrible messenger of death. The battle raged with such fury that it seemed as if two mighty oceans, bursting over their confines, had come on striking against each other, bringing destruction and devastation in their train. The Rájpút heroes ran forward. The brave and powerful Muhammadan Mírs met them. Columns of dust rose high up in the air and hid the sun. The martial music was sounded. The cannons boomed; the earth shook as well as the heavens. Flames burst forth on all sides. Dark smoke filled the air. There was a continuous shower of fiery shots which poured with violence like so many balls of gold. Heaps upon heaps of horses and elephants rolled on the ground, writhing in the agony of death. The ravage of fire-arms was so terrible that it seemed as if the cloud of death hung on the sky, pouring destruction everywhere. Blood began to flow from wounds in torrents. Large balls went through the bodies of elephants, making the wounds so open that vultures sat in them tearing and pulling out the flesh from within. They seemed as if numbers of devotees were engaged in contemplation, sitting in the caves of mountains. Many a horse was blown up. The cannons roared, and the volleys of fire emitted from their muzzles came on like flashes of lightning that attend thunder. Many mitrailleuses were fired at

* These were called *chaddars*, and were made by so fixing several gun barrels on an iron frame, as to admit of their being fired at once.

once. The continuous succession of the sounds of these fire-arms was like the sounds emitted from the fiery oven of a grain-baker. Thousands of guns were discharged all at the same time. The showers of their bullets were like the showers of hail-stones. Rockets of iron *(bán)* flew, circling with a great noise, and fell amidst the hostile ranks.

Heavy showers of arrows rained incessantly. Away they flew piercing many horses and elephants. There was a brisk play of *tomars* (sticks pointed at both ends). Many a lance was driven into the bowels of the Muhammadan soldiers amidst loud shouts. The swords began to flash fire. Even the massive heads of two elephants were cut off by one stroke. The blood of the slain flowed in torrents. When a sword was raised on the head of a Muhammadan, it failed not to cut through the helmet, the head, the breast-plate, the breast, the belly, the waist, the saddle and the horse. There danced and laughed Sambhu, the lord of tigers. With great glee he presented necklaces of human heads, one to every hero. Daggers were run through the breasts of the hostile soldiers. Their sharp points, seen outside the backs of the wounded, were like red hands of women stretched out of the windows of a balcony. The sharpest knives stabbed many a warrior, and *kanjars* (battle-axes) despatched many more by opening large wounds in their chests. Here and there the heroes of both sides fell to wrestling. The din of the battle was deafening. Many bodies rose without heads and fled at their adversaries with a rush. The bowels of the slain were scattered all around and drawn hither and thither by the greedy vultures. The wounded, made desperate by the deep scars on their bodies, began to rave. The Joginis filled their cups with blood and feasted on flesh, and the Bhairavs danced with mirth, eating the hearts of the fallen. The infidel heroes were taken to heaven by the black-eyed Houris and the Hindú by the Apsaras. The goddess Kálí opened wide her jaws and laughed, grinning at the Muhammadans.

The imperial forces withdrew in fear. The emperor, in an angry tone, thus exclaimed—"Where will ye fly to, ye fools? Wherever you may go, you can never escape from the fury of Hamír."

Alá-uddín to Mihrám Khán.—"See, Vazir, see how my cowardly troops prize their lives and fly away, while the Choháns are fighting bravely, regardless of life and interest. All the Kshatriyas are very faithful to the virtues of their clans. See, how they fight fearlessly and never show their backs to the enemy. See their bold determination, their unflinching courage, their noble resignation to fate, and lastly their heroic contempt of life. See, with what skill they are cutting our soldiers to pieces, never leaving for a moment the field of battle. On the other hand look at our forces. They, including the Mírs and the Amírs, love the

world and withdraw in fear. What is to be done now, able minister, what means shall we take in this dire extremity ?"

Mihrám Khán.—"Gracious Majesty, there is one means. Let us divide our forces into four corps, each under an able general. Give the Diwán the command of one, the Bakshi the other, me, your Vazir, the third, and yourself take the fourth. Let us then all unite in the field and fight very bravely; Hamír Ráo will never be able to withstand us."

This arrangement having been made, the Muhammadan troops came to the field. The crescents were raised aloft. Many able heroes, frantic and dreadful, riding on horses and painted elephants, surrounded the Rájpúts. They gave out a thrilling shout and went on very cautiously.

Both the Hindús and the Muhammadans rushed out, exulting, to the fight, puffed up with pride and courage. Then a massacre ensued. The cannons boomed. The fury of the shots drove the heroes to some distance. Again they ran forward and met. The field rang with the peal of the martial music, and the battle continued with unabated fury. The four-headed arrows of warriors went right through the hearts of soldiers, causing instant death. The forests of lances, darted with vehemence, repelled a body of hostile troops for a moment. The latter rushed forward, vaunting of their might. Their reeking swords cut down a large number of horses and elephants. Many warriors were struck dead, and their heads dropped down on the ground. Daggers were driven with determined hands. Thus battled both the parties, each exulting and glorying to win the victory. Heaps upon heaps of the slain lay scattered on the field—a dreadful spectacle!—on which vultures sat and feasted. The jackals licked the blood, and the she-devils filled their vessels, danced and sang with merriment. They wished for such another battle. They took pieces of flesh and bone into their bloody mouths, drained their cups, sucked their clothes steeped in blood and searched for more flesh. The superior archery of the Chohán̄s secured the victory. The Muhammadan ranks, seeing that the day was against them, fled away in confusion.

Then exclaimed Bahádur, the Mír of Abdál, curling his whiskers. "Order me, Royal Master, and this very moment I will, like a lion seizing a sheep, bring Hamír to your feet. Only give me in return the Ráj of Ranthambor. I will drag him into your presence, placing my bow around his neck." Abdál was placed at the head of 20,000 horse, determined to fight the emperor's cause. With a wild outcry rushed the brave Mír to the field and came in front of Hamír, and with him 20,000 troops and 30 elephants ran forward, mad and frantic with rage. On the Rájpút side Hamír ordered a hero to march forward and meet the Muhammadan commander.

Both met, each vaunting of his own might. Elephant fought with elephant, horse with horse, and foot with foot—all engaged in the work of destruction. Drums were beaten and trumpets sounded. Cannons boomed and blew up many a brave young warrior. Swords falling on heads split the bodies into two. Their sharp blades were like the bloody jaws of the grim Yam. Many a wrestler and athlete fell. Heaps upon heaps of corpses lay in a confused mass. Men on elephants and elephants on men, all huddled together very rightfully on the field. Horses writhed and rolled in the agony of death. Behold! bodies without heads dance and wrestle, their heads send forth a shout which thrill every heart, to the horror of the living. Hillocks of bowels were formed, which falling one upon another, seemed as if the elephant and the tortoise mentioned in the Mahábhárata were again fighting with violence. The kites and vultures swooped down upon them and flew away with them. The bowels suspending from their talons looked like lines of kites in the hands of playful boys. Pieces of flesh were pinched out of many a living body, and blood issued in jets. Arms and legs dropped off, and heads began to roll like so many water-melons. Tanks of flesh and blood were formed. The goddess Káliká laughed, the Khetrapáls danced and surfeited themselves with great glee. Śiva leaped and, full of joy, wore new garlands of heads. 6000 Khorásánís fell and were taken to heaven by the black-eyed Houris. 30 elephants were cut to pieces and lay scattered on the field.

Muhammad Sháh bowed his head, joined his hands and asked for orders. Hamír remained silent. Then the Shaik exclaimed—"See, Ráo, see my skill in managing swords." No sooner did he say the above words, than he flew in haste to the field. Seated at ease on his horse, he thus spoke out: "See, emperor, how good am I in the art of war. Why are you silent? Here stand I, your wrong-doer. See, here do I stand. Seize me if you can. I have come before you on an open field; now seize me as you used to vaunt, or if your words be false, you are no longer worthy the name of 'emperor.'"

At the command of Alá-uddín 30,000 Khorásánís, with the Mír of Sadukí at their head, rushed forward, exclaiming: "We will catch the Shaik, give us in return the dominions of Hamír." Drums and the high-sounding trumpets stirred them all to action. 10,000 heroes, the flower of chivalry, were with Muhammad Sháh. Besides, there were 23,000 soldiers. The famous Shaik spurred his horse and drew his sword in the teeth of the hostile army.

"Seize the villain, seize him alive, noble Sadukí" exclaimed the angry emperor at the top of his voice. "I will give you a *jágír* worth 12,000 a year." At that very moment the Mír came forward, vaunting of his might. The Shaik bowed to Hamír and began to flourish his sword.

"Victory to the Crescent" was shouted by the Muhammadan ranks and "Victory to Hamír" by those of the Chohán. "Hear, Emperor," cried Mír Sadukí, "hear what a trifle is Hamír to me who have subdued 'Tatta Bhakar.'" With these words on his lips, he rushed out in wild fury, taking with him a detachment of 6000 picked Khorásánís. Some soldiers advanced with flying colours. Heroes met with heroes, all brave, stalwart and proud. They bent their bows, pulled the strings, adjusted arrows with joy and shot them, each boastful of his own skill. The great Shaik began to fight very furiously. Swords flashed fire, and a dreadful massacre ensued. Hands and feet, arms and legs, heads and bellies dropped down. Many warriors fell on the ground and rose again with redoubled rage. Their bellies were cut, and the bowels came out, full of wind. All was a confused mass of flesh and blood. The 6000 soldiers were put to the sword; not a single man escaped. Their banners and drums were snatched away and presented to the Ráo.

A stronger body of Muhammadan heroes rushed to capture Muhammad Sháh. "Glory to you, valiant Chohán," exclaimed the latter, "your bravery, courage, truth and other manly virtues have won you a universal fame which will last for ever. You have staked your life and kingdom, wealth and property for the honour of your words. Glory to your decision of character, glory to your firmness. Your praises will be sung for evermore." The thought of parting with his noble patron crossed his heart and drew tears from his eyes. He continued, "When my future mother will give me birth, then shall I meet you, my generous Ráo."

Hamír replied.—"Warriors do not display soft feelings on the field. They do not love life, thinking it frail and transient. Union and separation go hand in hand. That which grows must perish; so it is taught by the Vedas. Do not be sorry, hero, do not lose heart. If you be separated here by death, be sure that grim monarch cannot separate us there in heaven. We shall all meet with one another, you, I, your wife, children, brother and the emperor too, the moment we leave our bodies. Leave interest and love. Nothing have we brought with us, and it is certain we can carry nothing away. This frail body is turned to dust, while good deeds live for ever in glory. Hear, Shaik, nothing is stable on the earth. What is our flesh? It is but a compound of dust, perishable at a slight accident. Why then love it? love virtue and glory and drain the last drop of your blood in order to have them."

Muhammad Sháh rushed headlong to the fight. Mír Gabru ran out from the imperial ranks and bowed to him.

Mír Gabru.—"I eat the salt of Alá-uddín, brother, and you that of Hamír. Let not our relation make cowards of us. Let us stand by our virtues at the peril of our lives. Although we shall part here from each

other, we shall surely meet and live together there in everlasting happiness."

Alá-uddín said, smiling.—"Hear, brave Muhammad Sháh, your words have come to pass to the very letter. You have never bowed down your head to me since you left the gates of Dehli. Give up your anger, and let us shake hands with each other and be friends again from this moment. Come and side with me. I give you the woman with whom you kept company, and besides, the province of Gorakhpur." The Shaik, smiled gently, and thus replied: "Remember, Emperor, the words you told me while in Dehli. Keep your promise to yourself. My mother has not borne in me so mean a son as to take what you give. Far from siding with you, I will, if God spare my life, try my best to have Hamír seated on the throne of Dehli, and his rule proclaimed through the length and breadth of India. I will never leave my generous patron and protector, but will worship his feet for evermore."

When Hamír heard this news he sent a body of troops to the aid of Muhammad Sháh with the following message—"Do not care for your life, Shaik. See, for the honour of my words, I have drawn my sword against the emperor of all India. Do not betray weakness now that I have staked so much for you. Do not fear to die; if you do so, Muhammad Sháh, then women are better than you. They keep their words, although they cost them their lives."

"Let us draw our swords, brother," exclaimed Mír Gabru, "and obey the orders of our masters. Our death is imminent."

Muhammad Sháh felt pleased. Both the brothers, glad and exulting, rushed at each other with drawn swords in their hands. They embraced each other. Mír Gabru falling at the feet of the Shaik asked for orders. "Brother," said the Mír, "we are killing each other for the sake of loyalty we bear to our masters. We shall never be blamed therefore." Fraternal affection yielded to the all-absorbing feelings of fidelity. The brothers rushed at each other. They shouted, their helmets touched the sky. They began to fight as if two monarchs of death encountered each other. They fell a-wrestling, brother with brother dying for their masters, an affecting scene indeed! There was a clashing of swords, which flashed like the flashes of fire seen, when woods and villages are burning on a summer night. Both fell, fighting bravely. Their hands, legs and heads dropped, and yet their trunks fought rolling against each other like two massive elephants. Celestial nymphs descended to marry both the heroes, and their dead faces wore a shining appearance.

They went to heaven amidst the cheering shouts of both the Hindús and the Muhammadans. The dying words of Muhammad Sháh were as

follow: "Hear, Emperor, you need no more kindle the flame of war. Return to Dehli." (To Hamír.) "Mighty Chohán, your deeds will be immortal in this sinful Káli Yug, while the lives of others are as arrows shot, that leave no trace in the air. Master of my body, Ráo Hamír, you have fulfilled your words, you have brightened your house and family, you have no equal in this world, you have not read the Korán, while Alá-uddín invoked your gods. We have not, we two, bowed down to him." His quivering lips uttered 'Glory to Hamír.'

Chapter XII.

Alá-uddín was for effecting a reconciliation. He said, "Listen, warlike Hamír, the bravest of all heroes, listen with attention to what I tell you. You need not draw your sword again, for I have made up my mind to return to Dehli with the living remainder of my forces. I not only forgive you your offences, but give you fifty-two *parganás* in addition to your territories. Reign undisturbed on them. I swear by the Korán that I will never assail your fort again. As is Dehli the capital of the Muhammadan government, so is Ranthambor that of the Chohán.

Hamír replied.—"Listen, Master of Dehli, and consider with attention. Who can avert the decree of fate? What is fated to be must happen, and no power, whether human or divine, can make it void. Whose are the territories that you are so presuming enough to give me? Did you give us our lands? No. Who sat you on the throne of Dehli? Your ancestors? No. It was destined. Then, where lies the use of your wise words? However powerful and cunning you may be, you can never avert predestination. Nothing is stable on the earth but deeds of glory. Conquer time. See, where are the cruel Duryodhan and the mighty Dashaskandha (the ten-headed Rávaṇa)? They have all been levelled in the dust. Whose is the fort, Emperor, and whose the throne of Dehli? They have been given to us by God. We were both parts of the great Padam Rishi. I have been born a Hindú, and you a Musalmán according to our virtues. You offended the gods, and so have been degraded to be an infidel. Leave enjoyment and hunger for land, and let us both go to heaven to live there, clad in everlasting glory. See, I have left my fort and come in your presence. I have kept my word. My companion and refugee has been blessed with a heavenly life. Let us follow him. Draw your sword, draw it, and do not delay. Love not the world. All earthly possessions are but husks of grain before a strong gust of wind. Fall with glory on the field, and let vultures and jackals feast on your flesh that you may be a sharer of eternal enjoyment, there in the world of felicity."

Alá-uddín's blood boiled. He sent forth troops to the field. All the soldiers and officers became ready, and another battle raged with such fury as surpassed that of the war, waged by Pártha on the famous plain of Kurukshetra.

80,000 Rájpúts and Bhíls, armed with swords, bows, and arrows, were drawn up in battle-array. The line of elephants looked like thick clouds of autumn. Numbers of horses ran faster than the air. The swords flashed like lightning. The arrows seemed as if showers of rain were falling fast with violence. The war-minstrels sang martial airs. The drums sent forth their soul-stirring peals. Messengers darted hither and thither.

On the Muhammadan side Mír Sikandar took an oath, bowed his head, and received orders. He said in a vaunting tone, "I have captured the fort of Bírjápur, so what a trifle is to me this fortress of Ranthambor. In vain have you, Emperor, pushed so many souls to death. Now see and admire my skill in fighting." He took with him all the regiments of Kandahár and marched with fury.

From the Hindú ranks came out a Bhíl, named Bhoj, and asked Hamír for orders.

"Allow me, noble lord, to fight the Kandahárís." "I can never do so," replied Hamír. "Do you remember, Bhoj, that two brave Bhíls were, of their own accord, beheaded near the foundation of the gate-wall of the fort? of them One was your father. Rájá Jait promised you protection. You were bred by him, so how can I push you on to death? You are wise and valiant. Go to Chitor, there to serve under the prince Ratan. Take this fleet horse and go there with all speed."

Bhoj.—"This head is devoted to your service, mighty Chohán. I am old and as long as I live, I will serve you. I consider my life as a pawn only for the cause of you, my master. If I lose this opportunity of showing my fidelity I shall never be able to gain it."

He bowed down to Hamír, took with him his regiment and rode forward. There was a forest of bamboo bows, arrows and daggers on the field of battle.

Mír Sikandar rushed out and met them. The valleys rang with the soul-stirring peals of drums and trumpets, and banners flew aloft. The battle raged, the arrows whizzed. The two wings of the opposite parties met each other. The Mír commanded the riders on elephants to go forward. The Bhíls pulled their clothes tight over their breasts and rushed headlong to the fight. They, savage and ferocious with rage, held bows in their hands. As the sound of drums inspires an athlete with courage, and he springs and jumps, so leaped Bhoj at the sound of war-songs. Arrows were shot, and daggers driven into the bodies of enemies. An ele-

phant rushed with fury and was the next moment torn into two pieces by two Bhíls named Moria and Bhuria. This was followed by a fierce outrush of all the Bhíls. They fell on the ranks of Alá-uddín and seemed as if angry legions of bears and monkeys were destroying the golden fields of Ceylon.

There was a play of daggers which stabbed many a warrior to death. "Behold, Vazir," said Alá-uddín to Mihram Khán, "behold how the Bhíls fight. They are making a rush at our men like so many enraged bears." Bhoj and Sikandar met. "Raise your sword, Mír, raise your sword at first," exclaimed the brave Bhíl. "Pity, pity, old man, I pity your old age," replied the Mír. Bhoj burned with anger. He ran a dagger with violence into the bowels of Sikandar. The latter laughed and struck the former dead in an instant. Down dropped the head, but lo! the body rose and made a fearful rush, committing a great massacre. Sikandar fell, and a beautiful Houri came down and took him up to Paradise. Innumerable soldiers of Kandahár fell with him. The trunk of the brave Bhíl danced on the field and yet stopped not its work of destruction. It rushed and rushed on with unspeakable fury. The imperial forces withdrew.

The loss on the Muhammadan side was 25,000 soldiers of Káshmír, 30,000 Kandaháris with Sikandar at their head, and ten Mírs headed by Ali Sher, while that on the Hindú was 2000 Bhíls with Bhoj.

The troops of Alá-uddín ran away in confusion. Hamír alighted from his elephant and came to the corpse of the brave Bhoj. He could not suppress his feelings; he wept; he said: "Who can measure the agony of my heart? Bhoj, my dear companion, is dead. You were unsurpassed in bravery, mighty Bhíl, and are now glorious in immortality. Oh! that I could follow you to that region of felicity whose gates have been open to receive you with honour. Glory to you, bravest of heroes, faithful to the salt."

While Hamír was lamenting the death of the Bhíl, Jayan Sikandar came unawares and rushed at the Ráo to seize him. But he was disappointed. The Chohán troops arrived in time, and Hamír mounted on his elephant.

The emperor's blood boiled at the sight of his men flying away from the field. "Why fly away, cowards, why fly away from the field? You have all been fed on the richest food and have enjoyed many blessings under my rule. What! to fly away and love life and interest at this critical moment and to heap shame on my head!"

All the heroes were stimulated. They rushed again to fight with Hamír. 200,000 of Kandaháris with Jayan Sikandar at their head marched, while Hamír, for the sake of truth and religion, made his soldiers ready for

another battle. Cannon and other fire-arms were no longer made use of, and swords only were taken in hand.

Ráo Hamír pulled the string of his bow and away flew shafts of arrows whizzing through the air. It seemed as if the mighty Arjún was fighting again on the field of Kurukshetra. Many elephants were pierced. Down they fell and rolled, roaring with agony. The mails of the horses were run through, and the fire-headed arrows flew away with violence from the bodies of many noble steeds, carrying their lives with them. They rained like the showers of the rainy season. The Mírs and Ráwats met. The latter rushed out from their ranks. Clad in clothes dyed with saffron, with the marriage-crowns fastened to their heads, many fierce warriors ran forward with thrilling shouts. The war-minstrels began to sing their praises, as they darted flashing like meteors. The hair of their erect whiskers touched their eyes, and all their hairs were erect, being inflamed with rage, energy and pride.

A thick array of elephants was set in front of the imperial force. The Rájpút heroes made at them with sword in hand and fire in their hearts. Hamír roared, standing on the field. The earth and the heavens shook with the peals of the martial music. Banners streamed. Some elephants were hurled in the air, others were struck dead. Some were torn into two, the trunks of others were cut off so swiftly, as if they were so many plantain trees. The tusks of some were broken, and the poor elephants instantly fled, roaring and writhing in pain. Others were caught by the tails and tusks and thrown suddenly on the ground. Heaps upon heaps of carcases were scattered on the field, and blood began to flow from wounds in torrents, as jets of water flow from a fountain. Many good horses rolled hither and thither, with their legs and bodies cut in pieces. Again the swords flashed. Heroes fought with heroes, while cowards fled away. The heads of some dropped, the legs of others, the arms of some and the breasts of others. Down came many warriors with a sound like the crash of falling timbers. The reeking swords fell on the heads of some, and the heads fell down and uttered forth a horrible scream, while their bodies began to dance on the field. Arrows whizzed, swords flashed, they sounded as the axe of the wood-cutter when at work in a jungle. The sharp lances went through many bodies as enraged serpents go to their dens. Daggers stabbed many, knives were run through, whose points looked on the other side of the body like tails of the cobra de capello. The *bisán* was driven with force, and breasts were rent into two.

The athletes commenced wrestling. Some were hurled in the air. The hands of others were sprained and plucked out. Some lost their heads, and others their legs. The earth was unable to drink the blood of which a river

flowed from the field. The huge carcases of horses and elephants, piled in heaps, formed its banks; the wheels of war-chariots caused currents. The bows driven by a gentle wind looked like waves, the hands and legs like serpents, and fingers with rings on them like shoals of shrimps, the heads surmounted by red turbans like lotuses, the shady eye-brows like the black-bee, and the hair like mosses. The bathing-places were where the heroes were vaunting each of his might. The Yoginis, filling their basins with the red liquid, looked like a troop of beautiful women filling their jars and pitchers, and Bhairavs, Sambhu and Káliká, dancing with great glee, like persons coming to bathe in the sacred months of Bysák and Kartika (April and October).

The living remainder of the troops of Alá-uddín withdrew in fear and shame. Standing on the field, the mighty Hamír roared like a lion. Many jackals, vultures and kites flew hither and thither, feasting on flesh and blood.

The flashing sword of Hamír fell on the head of Sháh Sikandar Jahán. Down dropped his enormous head with a crash. 125,000 Kandahárís were put to the sword. Besides, 100,000 of Alá-uddín's own troops, 500 elephants and 10 Mírs fell. Here are the names of the last-named. Shesh, Mahesh, Murád, Muhabbat, Muzaffar Alí, Núr, Askar Alí, Nizám Alí, Sikandar Sháh, Núr-uddín.

The wounded heroes raved here and there, quite furious and blood-thirsty. The bright car of the sun stopped as if its majestic rider would take a view of this dreadful spectacle. Even gods were taken aback. They wondered at the military prowess of Hamír and looked with admiration at the field of carnage. The gates of heaven were opened, and all the slain were taken above, the Hindús by handsome Apsaras, and the Muhammadans by black-eyed Houris. The loss of the Chohán was four heroes only.

"Hara, Hara, Hara" shouted the bold Hamír and, mounted on his elephant, rushed at the emperor. His reeking sword flashed in his hand. He exclaimed, "Come on, Alá-uddín, come and fight with me, draw your sword, fight with me, come along." The emperor became greatly enraged. Full of anger, he rushed to go in front of the Chohán prince. But his troops would not advance a step. The mighty Ráo was a lion in fight, therefore they feared to come before him. Some Mírs and Vazirs only were with Alá-uddín.

"How is this, Vazir," said the emperor to Mihrám Khán, "where are my forces? On whatever side I cast my eyes, I see none but the masses of the Chohán army."

Mihrám Khán replied.—"The best counsel, I can offer your Majesty, is to make friends with the Chohán and live in peace."

The emperor sent a herald to the Ráo with proposals of peace. He wrote, "Pardon my faults, brave Chohán, and effect a reconciliation. Enjoy undisputed your land and territory in the heart of Rájpútáná. I have made up my mind to return to Dehli."

When Hamír got the letter, he thus replied, "We are both on the field; we have come here to fight, and not to sue for peace. I cannot grant this request. He who uses humble words, words of weakness before an enemy clad in mail, is a coward, and nothing but a coward; or if you have any other motive, Emperor, be sure, it will bear no fruit." (To the herald.) "Go, herald, go to your emperor, and tell him that I am ready with my troops and will never go away without fighting with him."

Hamír to his vassals.—"My brave Sirdárs, do just as I bid you. The Rájpúts fight with thirty-six arms; but mind, in this battle, we will use four only—swords, daggers, *khanjars* and *bisáns*. Be glorious by fighting the emperor with these weapons, leaving aside the use of fire-arms—cannon, *ban*, *chaddar*, *hathnár*, *jambhur*, muskets, pistols and guns. Fall on the Muhammadan forces; but see, you do not kill Alá-uddín: if you die, you are sure to go to heaven and live there with handsome Apsaras for evermore."

The Sirdárs obeyed his orders. Clad in clothes dyed with saffron and fastening the crowns of marriage on their heads, they attacked the Muhammadan ranks.

There was not a single fire-arm, neither were there any bows and arrows. Swords only were played. The emperor came to the field, full of rage. Both the parties met. Throats, hands and legs dropped on the ground. Bodies were cut off in the middle, as the sharp edge of a saw divides a block of wood. Many a head fell, but the body rose and danced horribly on the field. The headless trunk of a Chohán made a rush and drove the trunk of a Muhammadan away. The severed heads shrieked and shouted, and their shouts sent a thrill to the hearts of the living soldiers. Daggers were run through, held in determined hands. *Khanjars* (battle-axes) opened large wounds on the chests, and *bisáns* (short poniards firmly attached to the fist) stabbed hearts of adamant. The field wore a very gay appearance, being ornamented with five different colours. The Bakshi was put to the sword. The moment he fell, the troops of the emperor ran away in confusion. There was a terrible din on the field. It seemed as if the dead rose and shouted with fury, opening their bloody jaws and extending their hands to fight. At the fall of the Bakshi, Alá-uddín himself reined his elephant aside. Only his Vazir was with him. A body of Chohán soldiers surrounded the elephant.

"Do not slay the emperor," exclaimed Hamír at the top of his voice, "do not slay him, for such is not the virtue of the Kshatriya. It is a sin

to kill an emperor because he gives food to thousands of souls. Besides, Alá-uddín calls himself 'master of the world.' "

Then was the emperor taken into the presence of Hamír, who said "Emperor, return to Dehli safe."

The next moment Alá-uddín, with the remainder of his forces, encamped four miles behind his former camp, in the direction of his capital. Considerable booty fell to the hands of the Chohán troops—tents, furniture, ensigns, weapons and money. All the wounded, irrespective of their caste, were taken special care of, and their wounds dressed. They were then sent each to his own country.

The sweet peals of *Dúndhaví* sounded the march. Full of joy Hamír started to return to his fort. He was too glad to remember what he had said to the princess Aṡá, his favourite wife. Some soldiers in the front line had the imperial colours in their hands. The eager princess saw them from the fort, and, thinking that victory had gone to the Musalmáns, committed a dreadful massacre and killed one and all, preferring death to ignominy.

When the Ráo entered the fort, he heard of the massacre, and the next moment he saw before him the lifeless body of his dear queen, that of his daughter Dewál, and those of the maids lying on the ground, with streams of blood gushing out from the wounds. Then he called to mind the words of Ṣiva. He resolved to cut off his own head and offer it at the feet of the god. He informed his Vazirs, officers and *Ráwats* of his determination.

"Patience, patience, royal master" prayed a hero. "Do not shorten your life. What was fated to be, has come to pass. Long live you in glory under the protection of Mahádeva. Grant our prayer and request. All your warriors join their hands and entreat you. Do not, mighty Ráo, behead yourself."

Hamír exclaimed.—"Hear, my brave heroes, partners of my labours and pains, hear with attention. The lion enjoys carnal pleasures but for once. The word which has once come out of the mouth of a virtuous man can never be withdrawn. The plantain yields its fruit only once. The oil which is rubbed over the head of a woman on the occasion of her marriage can never be rubbed again in her life. And the firm resolution of Hamír of doing what he has once said can never be shaken."*

Hamír bade adieu to all present, ordering them to go to Chitor to the service of the prince Ratan. All alone the great Ráo stood before Mahádeva and offered his own head to the god. The apsaras descended from

* सिंह विषय, सत्पुरुष वचन, कैल फले एकवार ।
क्रिया एल, हमीर हट्‌चड़ ना दुजिवार ॥

heaven, singing hymns of praise. Urvaṣí, the fairy-queen, threw garlands of flowers on his head and rubbed it with nectar. In heaven the gods sang 'Glory to Hamír,' and on earth all men did the same. Great rejoicings were made in the golden city of Amarávati on the grand occasion of the great Chohán's entering into Paradise. Glory, glory, glory to the brave and generous Ráo of Ranthambor!

Punishment of Sarjan Sháh.—After the death of Hamír, Sarjan Sháh called Alá-uddín to the fort of Ranthambor. The emperor was struck dumb by Hamír's resolution. He gave vent to his feelings of admiration in the following words: "Glory to you, Ráo Hamír, glory to your mother who bore in her womb such a heroic son. Your words are true. You are a perfect pattern of disinterestedness. You have left life and interest for the cause of one, a foreigner by birth, creed and nationality. The earth will never see such a hero again. You are unequalled in bravery, Hamír. I offered you terms of peace continually for fourteen years, but you were immovable from your purpose and resolution like a mountain. May your name be glorious from one end of the world to the other. Glory to you, valiant hero of heroes."

Turning about, the emperor said to Sarjan Sháh: "Listen to what I say, now. The Ráo is dead, go and get me a hair of his head." Mahádeva frowned, and the following words were heard to come out. "Take care, thou vile monster, thou ungrateful wretch, if thou advance one step to execute thy foul purpose, thou art a dead man, and thy head severed from thy body."

Sarjan was frightened out of his wits. The emperor laughed, looked at him, and thus exclaimed, "Basest of all mortals, thou faithless to thy salt, thou hast no equal in villainy. In return for thy black deeds take this deserving reward." His head was cut off, and his body tied to the tail of an elephant and dragged all about the camp.

APPENDIX.

Chaturbhuj, the first Chohán, sprung from the Analkuṇḍ, had two wives, Chakramatí and Anatrambhá.

Chaturbhuj by Chakramatí.	Chaturbhuj by Anatrambhá.
Bhúnál.	Sekand Rájá.
Bhunál worshipped Jín Mátá, and built the fort of Jínoṛ.	Rájá Sekand worshipped Aṣá Purí, finally called Sambháno Mátá and built the fort of Jalloṛ.

His clans.		His clans.	
(1.) Jínawal	Choháns (12 tribes).	(1.) Daorá	Choháns.
(2.) Dadrora	„	(2.) Saugrava	„
(3.) Kám Kháni	„	(3.) Khinchi	„
(4.) Dák ———	„	(4.) Balichá	„
(5.) Rakshiyá	„	(5.) Hárá	„
(6.) Bhakshiyá	„	(6.) Húl	„
(7.) Narbechhá	„	(7.) Chóká	„
(8.) Jarichhá	„	(8.) Dhanarayál	„
(9.) Ták	„	(9.) Bhagariá	„
(10.) Dori	„	(10.) Shachorá	„
(11.) Níman	„	(11.) Dhachorá	„
(12.) Daiman	„	(12.) Alnot	„
(13.) Marwál	„	(13.) Mínáwat	„
(14.) Dál	„	(14.) Bidúnsiá	„
(15.) Sachoḍa	„	(15.) Thúmia	„
(16.) Dhachoḍa	„	(16.) Koli	„
(17.) Chayel	„	(17.) Bahálá	„
(18.) Moyel	„	(18.) Chahelá	„
(19.) Gul-i-bash	„	(19.) Baletá	„
(20.) Charar	„	(20.) Jahellá	„
(21.) Bishutrá	„	(21.) Sahellá	„
(22.) Deshutrá	„	(22.) Sipat	„
		(23.) Bhágravat	„

Sekand Rájá.
|
Shubatsha.
|
Chand.
|
Bana Rikh.
|
Brahmá Rikh.
|
Indrasaen.
|
Bachh Rikh or Batsha Rikh.
|
Mahá Rikh.
|
Múl Rikh.
|
Jahin Rikh.

Jahin Rikh.
|
Ayan Rikh.
|
Mahat Rikh.
|
Múní Rikh.
|
Bóm Rikh.
|
Rúp Rikh.
|
Bhoj Rikh.
|
Shyam Rikh.
|
Shúvan Rikh.
|
Khauk Rikh.

Khauk Rikh.
Anant Rikh.
Bhao Rikh.
Showan Rikh.
Jaman Rikh
Dev Rikh.
Chahí Dit.
Nara Dit.
Daya Dit.
Ran Dit.
Hara Dit.
Nág Dit.
Chakra Dit.
Sur Dit.
Shúnya Dit.
Narendra Dit.
Khem Dit.
Shyám Dit.
Dhom Dit.
Shúvan Dit.
Karan Dit.
Dháü Dit.
Bám Dit.

Bám Dit.
Gang Pál.
Bhúpál.
Ajai Bhúpál.
Mín Pál.
Udai Pál.
Bíjai Pál.
Yagh Pál.
Lauk Pál.
Preja Pál.
Bishwá Pál.
Mantra Pál.
Baran Pál.
Budh Pál.
Bhóg Pál.
Gau Pál.
Brahmá Pál.
Dhúm Pál.
Trayan Pál.
Ráj Pál.
Chandra Pál.
Rájendra Pál.
Kul Pál.

Kul Pál.
Abhay Mandab.
Nara Mandab.
Shuvan Mandab.
Chahí Mandab.
Rikh Mandab.
Batshaya Mandab.
Goal Mandab.
Sujan Mandab.
Chakra Mandab.
Shúr Chakra Mandab.
Maru Mandab.
Kúmbha Mandab.
Baran Jang Mandab.
Dírang Mandab.
Khúṇwar Mandab.
Gáhu Ráj.
Bhringdeo Ráj.
Arúr Chandra Ráj.
Ráj Chandra.
Shyám Chandra.
Bíjaï Chandra.

Bíjai Chandra.
Hamír Chandra.
Rai Chandra.
Mahi Chandra.
Bal Chandra.
Gobind Chandra.
Omi Chandra.
Náráyan Chandra.
Mánik Chandra.
Trisiñha Dev.
Hem Dev.
Hara Dit.
Meg Pál.*
Ráj Pál.
Karlás Rájá.
Bhawak Dev.
Jadarth.
Bhímarath.
Shukmal.
Amarmal.
Jaman Bhím.
Samant.

* Meg Pál wrested the white umbrella of Indra. Hence the white colours of the Choháns.

Samant.
|
Nara Dev.
|
Bhúm Dev.
|
Shúr Ráo.
|
Anka Ráo.
|
Abhai Ráo.
|
Ajag Ráo.
|
Bóm Ráo.
|
Dham Ráo.
|
Shubudhi Ráo.
|
Chhatrapat Ráo.
|
Púr Ráo.
|
Rúp Ráo.
|
Shunyajit Ráo.
|
Ayan Ráo.
|
Ranjít Ráo.
|
Aranjít Ráo.
|
Prajápál Rájá.
|
Chandrapál Rájá.
|
Bíjaidit Rájá.
|
Yogendra Pál.
|
Ami Pál.
|
Kumbh Pál.

Kumbh Pál.
|
Dhúm Pál.
|
Antra Pál.
|
Mahi Pál.
|
Vatsa Pál.
|
Ratan Pál.
|
Rái Pál.
|
Karan Pál.
|
Sewant Pál.
|
Hara Pál.
|
Sío Pál.
|
Jamand Pál.
|
Ijj Pál.
|
Indra Pál.
|
Lún Pál.
|
Udai Pál.
|
Vatsha Dev.
|
Chakra Bhúp.
|
Ajai Chandra.
|
Chiman Dev.
|
Anal Dev.
|
Vatsa Ráj.
|
Matsya Ráj.

Matsya Ráj.
Hara Dit.
Shur Dit.
Jana Dit.
Trichhanna Dev.
Arak Dev.
Daud Nareṣ.
Dháol.
Anna Mahi.
Bíjai Mahi.
Chand Ráj.
Bíl Dev.
Kabilás.
Bichitra.
Gahu.

Gahu.
Nara Dev.
Basu Dev.
Mánik Rao, reigned in Sámar.
Maliagar.
Malayasi.
Krit Bimb.
Sáwant Shi.
Narendra.
Big Ráj.
Ajai Ráj — founded Ajmir in 343 (Sambat) and built the fort of Tárágaṛh.
Ajay Pál.*
Prithviráj I.† son of Bísaul Dev.
Alán Dev.

---

* Ajay Pál.
Bíjay Pál.
Chandan Dev.
Chatak Dev.

Chatak Dev.
Bír Balan Dev.
Bísal Dev.
Prithviráj I.

† Prithviráj I, had 9 sons.
(1.) Alan Deo—father of Alnat Chohán who reigned in Ajmir.
(2.) Prithviráj II.
Súraj Mál father of the Shangra Chohán, who built the fort of Shangra.
(3.) Dev Ráj " " Deorá Chohán, who built the fort of Deorá.
(4.) Khím Karanjí " " Khínchí Chohán, who built Rághogaṛh.
(5.) Udai Karanjí " " Balechá Chohán of Madhugaṛh.
(6.) Bíram Devjí " " Khamíchá Chohán of Suratgaṛh and Bhadaria Chohán.
(7.) Húljí " " Húl Chohán of Jeyatgaṛh.
(8.) Har Páljí " " Hara Chohán of Kotá and Búndí.
(9.) Chatur Ghal " " Chókhá Chohán of Chatshu.

Alán Dev.
|
Ana Rájá.
|
Gandu Rájá.
|
Indu Pál
|
Amar Gangayaji.
|

1. Someshwar.			2. Hari Singh.	3. Bír Singh.	4. Dúrs Ráo.	5. Kán Sámant.
1 Prithvi.	2 Har Ráj.	3 Chaharde.	Shúr Singh.			
		Bahujuth.	Ráo Jait.			
		Bíjai Rám.	Hamír.			
		Lákhan Shi.	Ráná Ratan Sen.			
		Rájá Shankaṭ.				

21 sons ruled in Etgaṛh.

1. Harsha Rájjí ruled in Dhúnotí.
2. Sains Máljí „ „ Bigota.
3. Bírám Chándjí „ „ Kumayu.
4. Trilók Chándjí (Khayir Jártolí ká Rájá).
5 & 6. Sheo Rám and Bínáyá Rám ruled in Sheopúr, Kangrá in the Panjáb.
7. Gyan Chándjí ruled in Etawa, Jálpí, Kálpí, Bágha, Mainpúrí and Pátiwarí.
8 & 9. Rám, Bariam ruled in Kálá Páhár, Sonkar, Sonkari.
10 & 11. Gáher, Báher (Káshiká Choháns).
12, 13, 14, 15, 16. Naulji, Gúsainjí, Chít Ráj, Bámbh Ráj, Barshí, ruled in Pachewárá, had 500 villages, and 6 towns—Káhu, Lálsót, Lewalá, Digo, Lanká and Baraúnḍo.
17. Ajja—Shrí Mál Bunniyas descended from him.
18. Bijja—father of Sheo Ranját clan.
19. Kalas Ráj—father of the Chitá Mínás.
20. Mír.
21. Rámu—father of Kholá Ahir.

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"The bounds of its investigation will be the geographical limits of Asia: and within these limits its inquiries will be extended to whatever is performed by man or produced by nature."—SIR WILLIAM JONES.

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JOURNAL

OF THE

ASIATIC SOCIETY OF BENGAL.

Part I.—HISTORY, LITERATURE, &c.

No. IV.—1879.

Pali Derivations in Burmese.—By H. L. St. Barbe, B. C. S.

The Burmese have borrowed their alphabet, religion, literature and a large portion of their language from the neighbouring continent. The alphabet was no doubt introduced at a very early period. It has never been analysed with any care, but its square variety approximates more closely to the Asoka and fifth century (B. C.) inscriptions than any later Indian modifications. It was adopted *en bloc*, though the Burmese have never themselves found any use for 12 out of the 34 consonants and have altered several of the sounds, notably the 2nd varga from "ch" and "j" to "s" and "z", the vowel "ai" into ê (pronounced more or less like the "e" in there) and "o" into "ô" (like the "aw" in "law"). To express the sound of an "o" and "ai," they invented a new compound, which I propose calling "ui" from the symbols it is apparently composed of. The remaining characters, for my present purpose, will be more conveniently designated by their Indian equivalents.*

The earliest date mentioned in the national chronicle is the foundation of the Sarekhettará kingdom (B. C. 482). Previous to this, lengthy lines of kings with Indian names are mentioned at Saṅgassa and Pañcala, as the old capitals of Tagoung and old Pugán were denominated. There is no adequate reason, so far as I can see, for rejecting the Indian origin of these early kingdoms. The country was in much the same state as Karenní or the Kachyen hills are at present; inhabited by a number of petty

* A paper on Burmese Transliteration was contributed by the writer to the R. A. Society and published in their Journal for April 1878.

tribes with scarcely a shred of order, civilization or authority among them. The advent of an Indian prince (be he real or the reverse), with a little band of refugees, would have much the same effect as the advent of a Burmese "mintha" among the Karen Highlanders. He may be the sole element required for order, coherence and organization. The separate clans become a nation, the separate states a kingdom, a dynasty is established, and history commences. The rulers will introduce as far as possible their own language, usages and religion. Their sons and cities will have sonorous Indian titles, and they will import astrologers, sages and as many representatives of their native Pantheon as their subjects can comfortably digest. A hundred years or so, and these will remain the sole testimonies to their foreign extraction. This is exactly what has happened in Burma. The bulk of the Aryan element, no doubt, found its way into the language hundreds of years later through a Pali channel, when Anôrahtá in the eleventh century A. D. brought the "Three Baskets" from Thahton and had them translated into the vernacular. But Sanskṛit words had entered the language before this, without any connection with Buddhism. The names for the days of the week are derived from a Sanskṛit source, though distorted at times beyond recognition. Aṅga, Buddhahú :, Sokrá :, Krásapate :* and Chane are identifiable, but Tanaṅlá and Tanaṅgánve have as yet defied analysis. So too the signs of the zodiac, such as priccha, karakaṭ, prissa, more nearly resemble the Sanskṛit; while such words as khyaṅse a lion, rasse a ṛishi, athwaḍ (S. thuḍ to cover) a pinnacle, húrá : (S. horá) astrologers, pritta (S. pretá) the dead, missa (S. meṣa) a ram, prassad (S. prásáda) a tower, seem to point to a time when the foreign vocables were written down as they sounded in Burmese, without reference to their etymology. The presence of the "r" also in such words as samuddará, krattiká, amruik (amṛita), krammá, drap (darpa), gruih (graha), chakrá, aggirat, bhúmirat, indicate an earlier source than Pali. As time went on, the importations vastly increased, and an estimate of words of Indic extraction as constituting one-seventh of the whole Burmese vocabulary would be rather under than over the actual proportion. Many, no doubt, are corrupted and contorted beyond all knowledge. Captain Latter remarks in his grammar that there is no such thing as orthography in the Burmese language, and no doubt the existence of 12 superfluous characters and the slurred enunciation of final consonants have led to a good deal of confusion. Such forms as vibhak (vipaka), puppa (pubba), phoṭhappa (phoṭṭhabba), kú (guha), bhavak (bhavaggaṃ) are typical instances of

* The change of an initial labial into a guttural is rare in Burmese. The only other instance I know of is *pattará* into *kattará*. The change of *t* into *s* is common enough.

common errors, and many others will be noticed among my examples. Neither Dr. Judson in his Dictionary nor Dr. Mason in his Pali Grammar can be relied on, and I regret to state that the provincial government is among the worst of offenders. Besides countenancing the most frenzied methods of transliteration, it had the temerity to allow the Education Department to publish a collection of popular Burmese texts with but the scantiest acquaintance with the language. Pali MSS. were exclusively relied on, the result being that it is almost impossible to conceive more orthographical errors being included within a smaller space.

The process of engrafting Aryan vocables on a Mongoloid stock must be more or less clumsy and inadequate. Gotama would scarcely understand ten words together of his own doctrine as recited by a phungyí, and most certainly could not make himself intelligible to a Burmese audience. The character must always be a most unsatisfactory one to adopt for any new dialect or language. In reducing Karen to writing, the American Missionaries had a grand opportunity of introducing the Latin alphabet (with the necessary additions) which was just as intelligible to their converts as any other, and which would have led easily to a general scheme of vernacular transliteration. They were misguided enough, however, to employ Burmese, the consequence being a series of appalling hieroglyphics incomprehensible to all but the contrivers. I hear that Kachyen is to undergo a similar treatment. This is the language spoken by all the Singphos on the borders of Burma and Assam and deserves a better fate than being interred within an ingenious (perhaps) but inscrutable cipher. May I be permitted to record a feeble and, no doubt, ineffective protest? Apart however, from a want of orthoepical precision (to use Dr. Wilson's phrase) there is a certain amount of method and uniformity observed in the appropriation of Pali terms. I have been able to frame a simple set of rules which are tolerably comprehensive and which may be of some use in dealing with future importations. It will be noted (1) that anuswára and the nasals are freely interchangeable, (2) that visarga (which in Burmese is only used as a grave accent after long vowels and nasals) is added without any reference to the original.

I. The word was imported whole.

E. g. kála, sati, utu, gati, ussabha, rathá :, kulá :, khaṇa, upamá.

Often inflected or misspelt.

E. g. ásavo, upaddavo, pakate (pakati), chute (chuti), sare (sirí), yújaná (yojanami), haṅsá (haṃsa), aṅsá (aṃsa), parikkhayá (parikkhára),* milak-

* *Cf.* also Tirichchhan for Tiracchchhána. There was evidently some false analogy deduced from "viriya" another importation.

khu (milakkho), niriya (niraya), mágha (maghá), nagá (nága), akhobhaṇí (akkhobiṇí), kambulwe (kambulo).

II. It was abbreviated,

(*a.*) if the penultimate vowel was "a" or "i" and the last consonant uncompounded, by changing the vowel into "ui" and dropping the termination.

E. g. phuil (phalaṃ), buil (balaṃ), gruih (graha), naguiy (nagaraṃ), makuiṭ (makaṭa), rakkhuik (rakkhaka), guiṇ: (gaṇa), kasuiṇ (kasiṇa), karuiṇ (karaṇaṃ), ganuiṅ (kánanam?), samuiṅ (samañña?). But kuiy (káya) is an exception.

"T" was occasionally changed into "k."

E. g. charuik (charita), amruik (amṛita.)

(*b.*) If the penultimate vowel was neither "a" nor "i," or if the last consonant was a compound, the final vowel or syllable was dropped.

E. g. adhippáy (adhippáya), apáy (apáyo), daṇ (ḍaṇḍa), dát (dátu), upachá (upachára), upade (upadesa), alin (alinda), kaṇṇamú (kaṇṇamúlam), chhan: (chhanda), dhutaṅ (dhuttaṅga), pullaṅ (pullaṅko), nimit, (nimittaṃ), kum (kumbha), vaṅ (vaṃsa), ekan (ekaṃsa), kan (kañña).

N. B. In "janí" (janiká) and chhetí (chhetiyaṃ) the í has been lengthened to allow the operation of this rule.

Occasionally the vowel was shortened.

E. g. naṃ (náma), yaṃ (yáma), amat (amátya), dan (dámaṃ), bhuṃ (bhúmi), atit (atítam).

2. In some cases more than one syllable is dropped.

E. g. upád (upádánaṃ), byañ: (byañjanaṃ), navarat (navaratanaṃ), piṭakat (pitakattayaṃ).

3. "o" is changed into "u" in the words—

anuluṃ (anuloma), upus (uposatha), alup (álopa).

4. The vowel is lengthened in the words—

tú (tula), kú (guha), vá (vassam).

5. A penultimate y is often changed into ñ or ê.

[As a final, ñ has 3 sounds in Burmese, the first nearly corresponding to "í," the second to "ê," the 3rd (with an anusvára) to "in."]

E. g. nañ (naya), pachchañ (pachchaya), vinañ (vinaya), ñarê (niraya), sahê (saháya).

6. The letters ñ (with an anusvára), ṅ and u are often employed anomalously.

E. g. jañ (jana), abhiñañ (abhiññá), upamañ (upamánaṃ), uyyañ: (uyyánaṃ), sabhaṅ (sabhá), bhavaṅ (bhava), maggaṅ* (magga), águm

* Dr. Judson derives maggan from maggaṅga. This appears unnecessary and erroneous.

(ágamma), aruṃ (arammaná), niguṃ : (nigama), saraṇagum (saraṇa gamanam), apud (apada), vevuch (vevachanaṃ), uṇṇaluṃ (uṇṇalamba ?).

III. Occasionally some other change occurred in the word, *viz.*—

(*a.*) The Burmese substantive prefix "a" was given.

E. g. arup (rúpam), arasa (rasam), akhaṇ (khaṇḍeti).

(*b.*) The initial vowel was dropped.

E. g. pamá (upamá), laṅká (alaṅkára), dhiṭṭhán (adhiṭṭhánam), bhissit (abhisito), rahan : (arahaṃ), numo (anu modaná).

(*c.*) Some medial alteration took place.

E. g. muigh (megha), adhwan (addhána), bhe : (bhaya), sabho (sabhava), galun (garulo), mahut* (muhuttá), puthui (thúpo ?). For a similar inversion compare danchakú : for chandakú :, krapate for prakate, and perhaps rakhuiṅ for kharuiṅ.

The above is a brief and imperfect summary of the methods employed in adapting Pali derivatives to the Burmese vernacular. Some of the changes and modifications were necessitated by the character of the language ; others were dictated by euphony. I have not here analysed the reasons for any change, nor have I noticed the specialities or alterations of meaning which many words have assumed in their transfer. Such terms as saṅbho (a ship), saṅkan : (a chivara), saṅkham : (a hermitage), dhúvam (the north star), pariyáy (artifice), charit (expenses), joti (a schismatic) cannot be found with such significations in any Pali or Sanskṛit dictionary, and a long list of obviously Indic words could be made up comprising such common names as puñña : (a Brahmin), muṭṭho (a dagoba), rikkhá (provisions), purapuik (a slate &c.), koja (an era), prakkadin (an almanack), which are not to be found at all.

I should mention in concluding that some Pali words are to be found in several forms, such as kammam kaṃ krammá, káya kuiy, mag magga maggiṅ, sarup rup rupa arup, mit mettá, chit cheta, &c. The Burmese are fond also of using a Pali and Burmese word of the same signification to form a sort of aggregative compound.

E. g. mit-chhue (friends), amin aṇa (an order), puṃ-saṇṭhán (appearance), amhu kichcha (business), arap-desa (a place), amyak-dosa (anger), &c.

These well exemplify the way in which Pali has become interwoven with the common speech and thought of the people. A thorough knowledge of Burmese would necessitate some acquaintance with its Aryan ally, and one could wish to see a dictionary or grammar undertaken with some recognition of this fact.

* This dropping of the "u" is very common in Burmese as patí :, pachchhui :, &c. for putí :, puchchhui.

A peculiarity of the river names in Asam and some of the adjoining countries.—By S. E. Peal, *Sibsagar, Asam.*

Some years ago the prevalence of Di or Ti, as a prefix to river names in Asam, induced me to draw up a list of such, in the hope that some clue might be found that would explain the frequent recurrence of it.

It soon became evident that this Di, Ti, meant "water" in many of the hill dialects, and that the second part of the word was the true name of the river, in many cases descriptive; thus, the Tisa of the Naga hills means, Ti = water, Sa = young, the "young river."

Di and Ti was also frequently seen as a suffix; thus, Ai ti = mother water, Rapti, Tapti, Kampti &c.; occasionally softened to thi, as in Yung-thi, La-thi, Mú-thi.

More extended search revealed the peculiarity in most of the countries adjacent, with traces of it as far as western India. In the Naga hills, there are several variations, Ti, Tsi, Di, Dsu, and Chi, among Kacharies, Doi, Lushais Tui, and over the Malayan peninsula Tsi and Si, as in Si-tang, Si-mún, Sigún, although both Ti and Di also are occasionally met with.

In China we see it under various forms, as Tse, *e. g.* in Yang *tse* Kyang, and as Tsi, Tchi, Tchu, Sui and Chu, which latter is also so prevalent over Tibet, Chu being Tibetan for water. This latter is also common all along our northern frontier, "Lang chu" being in fact the upper Indus. Northwards, among the restricted Turanians, we get the Turki Su for water, and the Mongolian Us-su, no doubt related to the Tibetan Chu and Chinese Sui.

Following the course of the great Turki Mongolian invasions, from the north-east, we find this same word for water, more or less attached to rivers through Persia (as Sui) and Asia Minor (Siai, Soui, Su), emerging in European Turki as Su (there are two Kara-su rivers alone, falling into the gulf of Salonica, kara = black and su = water). Obviously these names are more or less of a generic character, the black water, the white water, &c., being common in most countries. Returning eastward to Asam, where the Di is so very prevalent, it is noteworthy that the Doi of the Asamese Kacharies seems related to the Da and Dah of the aboriginals of western Bengal and Central India. Passing westwards from Asam, we see the Tista, Di-pok, Di-onai, &c. in Bihar; Seti and Di-wa are also names of the Gogra; and Di-ngrai, a branch of the Arun in Nipal, is an almost exact repetition of the Ti-ngrai of eastern Asam.

Among the tributaries of the Ganges we have the Dioha, Rapti, and Gum-ti.* Again we have the Di-saun R. B. of the Bitwa (Jamna), the Narbada is the Kun-di, and we have the Tapti, Rapti, Dasti, Dire, &c. T

* There is another Gumti in Hill Tipperah.

is again met with, as the vernacular for water, among the tributaries of the upper Satlej and Indus, and used by hill tribes who do not seem to have had any communication, in the historic period, with the non-Aryans of Eastern Bengal. Jumna = Jamuna or Di-a-muna of Ptolemy.*

In regard to the peculiarity under notice, it is evident that the Himálaya has acted as a conspicuous speech-parting. Starting from China, where we have Tse, Sui, and Chu, we get, viâ Tibet, Chu and Su alone, with their local variations, whereas to the south of the range, viâ Burma, Asam and India, we get the variations of Di, Ti, Thi, Dzu, Dui, Dah, which are as absent north of the Himalaya, as the Chu and Su are south of it, although to the east the two groups are connected by many intermediate forms.

The peculiarity in question gains importance from a knowledge of the fact that river names often survive the races who gave them. As Dr. Buchanan Hamilton has truly said, "the names of rivers and mountains "are those which are usually most carefully preserved among the changes "that take place in the languages of mankind."

It is not intended that these few remarks should be taken as an attempt to group non-Aryan races through a single word, but rather to invite a comparison between this peculiarity, as attached to river names, and the languages spoken *in situ* at the present day. In many cases the race giving the name has evidently departed, leaving, as in Asam and parts of Bengal, little else but these river names as evidence of former occupancy. This is specially noteworthy in a country quite destitute of architectural remains, like Asam and the hill country surrounding it. A careful study of such words as are likely to survive the races that originate them may lead to many unexpected proofs of that which is, so far, only surmised. It would also include the changes which such words or names systematically undergo at the hands of Aryan races, as where Su is rendered "Hu," or even "Eu," as in Eu-phrates.† The Indus is obviously the Ind-su, and we have it on many old maps as Ind-huh (*h* being *s* at each extremity of India); it is also rendered as Ind-suh. Non-Aryan names even seem to occur in Persia; Ak-su, literally white water, is found common all over Central Asia and as far west as European Turkey. Tested by the above, it looks more than probable that this is the source whence we derive "Oxus," one of the tributaries of that river, near its source, being Ak-su. I am, however, informed by a good authority that it comes from Waksh, also one of its sources. Possibly there may be less difference actually between the "ak-su" and "waksh," than at first sight appears.

* [*Di* appears to be merely the Greek way of spelling the Prákrit *j (jamuṇá)* = Sanskrit *y (yamuná)*; see A. Cunningham's *Ancient Geography of India*, p. 46. Ed.]

† [The Assyrian *hu* (Greek *eu*) = Scythian *ku* "water"; see A. Cunningham, *Ancient Geography*, p. 37. Ed.]

"Kara-su," *i. e.* black water, is perhaps the commonest of this group of words (being also of a generic character). The name extends from the east of China to Turkey in Europe, and from Turkestan to the Arctic Ocean. A list of instances with Latitudes and Longitudes is given further on.

In Longitude they lie mainly between 21° 50′ east and 69° east, while in Latitude the name occurs mainly between 35° N. and 45° N., a very restricted belt, corresponding with the Mongolian invasions westwards.* Notwithstanding the fact that the whole of Central, Eastern, and Southern Asia, were probably originally peopled by non-Aryans, apparently spreading from China westward, it is noteworthy how effectually the Himalaya stood as a speech-parting, dividing the races spreading south of it from those to the north, even when tested by this one word for "water."

In studies of this kind much needless confusion has been caused by the very various modes of spelling adopted, ere the Hunterian system was introduced; the real name being often so disguised as to be barely seen. Indeed, in many cases we have boldly changed the original name for another, as when Rennel turned the Ai-ti (mother water) into Barelly, simply because the former sounded to him absurd. The Amins also, who were with Buchanan, endeavoured to turn Tista into Trista or Tristota, and against the protest of the inhabitants. Carelessness has also had a great deal to do with the confusion we see, and the first mode of spelling that was chanced on remained, whether correct or no. Some rivers are spelt four or five different ways and at times as many as eight, and it is common to find the same river even on the same map spelt two different ways; thus we have Dee, De, Di, Dy interchangeable.

It must also be borne in mind that maps seldom give more than one name where there may be several well known locally to distinct tribes near. Thus Mbong-kha of the Singphús is the Ti-keng of the Nagas. Dinoi of the Singphús is Ning-thi of the Munipuris (the beautiful water), and it is Nam-tonai of the Shans and Kyendween or Thanla wati of the Burmese. Probably it has also Naga names. Many rivers therefore may not at first sight seem to fall into the following list, that are yet very conspicuous, as the Dhansiri, but on investigation it turns out that the old name is nearly obsolete, *i. e.*, the "Di-ma," whence Di-ma-pur. It is or was also called the Ti-mú.

In some cases again the name of the river is obviously recent, as the Godadhur, its true name being the Machú, chu being the Bhutan varia-

* I am not here in a position to follow out the word 'kara' (black) and trace its relationship to 'kala'; possibly it has been done, but if not, it would seem to offer an interesting and instructive case whereby we may possibly collate the non-Aryan languages with the Aryan. On the other hand it may simply have been imported from one to the other and modified lately.

tion, as in Tan-chú, Tso-chú (the Sonkosh) or Wang-chú, Har-chú Par-chú &c.

It is often difficult to spell Turanian words correctly and Tsi, which gives great trouble, is as common in those languages as it is rare in the Aryan groups. The river Tsik, tributary L. B. Namrup and Dihing, I find spelt by us as Chik, Chick, Seek, Tuseek, Ta-sheek, Cheek, and Tee-chick, and it is usually spelt Nam-chik, while on the spot it is clearly pronounced Tsik.

Sanpú and Singphú also would be as correctly rendered by Tsanpú and Tsingpho.

The difference between Di and Ti is often hardly perceptible, and at times nil, as Tirap, Dirap and Dihrap.

It may appear to some that the second half of the name, if Ti is removed, is unpronounceable or difficult to realize as a distinct word, but such are common in these hill dialects. The western branch of the upper Irawadi is called by us Milee kha, but should be Mli; and in Mbong, Rz'n, ngrai, there is no vowel or even pause between the first two consonants.

As the names of rivers are probably the last to change in any age or country, being frequently retained long after the originating language is extinct, as in America, the subject is of special interest where Aryan and non-Aryan races have evidently overlapped in times past, and might well repay systematic investigation. The following is a contribution, to which I would invite additions. It will be seen that the position is often not given. This is the second list compiled, and in the original one when the names were first collected the sites were not recorded.

LIST OF RIVER NAMES.

Di-a	near Diwangiri	
Di-alung	L. B.* Kaláng	
Di-bong	N. E. Asam	Up. Asam
Di-buru	N. Lakhimpur	Up. Asam
Di-brú	there are 3 Dibrús	
Di-bru	original name of the Kalang	C. Asam
Di-bú or Tiphú	near Samaguting	Naga hills
Di-búg	near Phungmai or Shuemai kha	Shan States
Di-bí	R. B. Dinoi	Up. Barma
Di-blai		E. Bihar
Diflú	L. B. Brahmaputra, Mikir hills	C. Asam
Di-g	L. B. Chenab, Lahore	N. W. P.

* L. B. left bank, R. B. right bank, trib. tributary, &c.

Di-ga	R. B. Dinoi	Up. Barma
Di-garú		Asam
Di-garung	L. B. Dhansiri, Mikir hills	C. Asam
Di-gboi	R. B. Dihing, Jaipur	Up. Asam
Di-gi	R. B. Brahmaputra, 89°	Asam
Di-gli	Jiri Forest	Cachar
Di-gmo	R. B. Barák	Silchar
Di-grimo		
Di-gúm		Patkái
Di-grindi	a name of Dhansiri	
Di-ha	Khwang	Up. Asam
Di-hanji		Kasi hills
Di-hang		
Di-hing	Burí, and No.	East Up. Asam
Di-hong		North Up. Asam
Di-hanji		
Di-hri		W. Bengal
Di-joi	L. B. Disang, Sibsagar	Up. Asam
Di-jú	N. Lakhimpur	Up. Asam
Di-kalai		
Di-kar	Lat. 25° 49′ N. Long. 94° 6′ E.	
Di-karú	R. B. Dialung, Mikir hills	Asam
Di-koi	N. N. E. of Kapili and Direng	
Di-kori		
Di-krai	N. E. No, Dwar	C. Asam
Di-krang		
Di-krengkong		
Di-kung		
Di-khou	L. B. Brahmaputra	Up. Asam
Di-has		Balk
Di-hiri	W. of Subansiri	Up. Asam
Di-hri	trib. of Pisola	Up. Asam
Di-jung	(Theobald's cat shells, p. 11)	
Di-khari	Upper Dimo, Dihing	Up. Asam
Di-kling or Di-mra		Kopili, Asam
Di-khor	W. Kamaikia	C. Asam
Di-kra	L. B. Kora	Up. Asam
Di-khai	L. B. Tingrai	Up. Asam
Di-khúm	L. B. Sessa	Up. Asam
Di-khú	Dyor, L. B. Dhansiri	C. Asam
Di-kroi		

Di-lai	trib. Manás	C. Asam
Di-li	name of upper part, Disang	
Di-lih	near Sibságar	Up. Asam
Di-lí	Mishmi hills	
Di-ling	Mishmi hills, Brahmakund	
Di-len	L. B. Indus	Cabul
Di-lkiri	L. B. Brahmaputra, name of Kakadanga	Up. Asam
Di-ma or Kali jan	W. Duars	Bhutan
Di-ma	a name of Dhansiri	
Di-mal	L. B. Kalang	C. Asam
Di-mala		
Di-mari		
Di-mo	R. B. Disang	Up. Asam
Di-mri	trib. Manás	C. Asam
Di-nabi		
Di-noi		Up. Barma
Di-on	No, Dihing	Up. Asam
Di-oha	L. B. Ganges	Oude
Di-lail	R. B. Indus, Lat. 35°30′ Long. 40°74′ E.	
Di-mú	N. Lakhimpur	Up. Asam
Di-ngrai	W. Branch, Arun	Nipal
Di-ndi	Kistna	S. India
Di-onai	Tista and Jamuna	Bihar
Di-pha	R. B. Brahmaputra	L. Asam
Di-phi		
Di-phlú	Nau gáoṇ	C. Asam
Di-pling	R. B. Disáng	Up. Asam
Di-pota	Gábharu, char Dwar	C. Asam
Di-pta	R. B. Br. Tezpur	C. Asam
Di-pok	trib. Sonkosh	Bihar
Di-phú	trib. Kundil, Bram	Asam
Di-ra	Kerim pani, Dihing	Up. Asam
Di-reng	R. B. Kapili	
Di-ri or bri	into the Disola	
Di-ri	Brahmakund	Up. Asam
Di-ro	Jáṇgi	Naga hills
Di-rok	No, Dihing	Up. Asam
Di-roi	R. B. Disáng	Up. Asam
Di-rijmo	Miri country	Up. Asam
Di-sam	L. B. Dihing	

Di-san		Bundelkund
Di-sáng	L. B. Brahmaputra	Up. Asam
Di-pha	the old Tista	Bengal
Di-ri	Lat. 31°, Long. 66°	Afghanistan
Di-rjú	L. B. Subansiri	Up. Asam
Di-rjú	R. B. Ronga Nadi	Up. Asam
Di-rpai	L. B. Subansiri	Up. Asam
Di-sang	Up. Irawadi	Brama
Di-sang	Pátkái	Asam
Di-snoi	Gábharu, char Dwar	Asam
Di-soi	L. B. Brahmaputra	Up. Asam
Di-sem	R. B. Dhansiri	
Di-sarú	L. B. Jamuna	
Di-saún	R. B. Bitwa, R. B. Jumna	Bengal
Di-sola	N. Sibságar	Up. Asam
Di-sú	Brahmakund	Up. Asam
Di-sún		
Di-sura	Tengá páni	Up. Asam
Di-tori	Dee-tu-ree	
Di-torú	L. B. mouth Kalang	C. Asam
Di-ula or Di-yula	old bed Manás	
Di-wa	the Gográ	Oude
Di-yong	Kapili, N. Cachar	Cachar
Di-yung	trib. Dhansiri or Doiyang	
Ti-bai	Naga hills, Sibságar	Naga hills
Ti-bi		
Di-soi	R. B. Kundil	Up. Asam
Di-yak or Di-ak	Mahanadi	Bengal
Ti-vai	Naga hills	
Ti-ding	Brahmakund	Up. Asam
Ti-dlum	Yugli Pátkái	
Ti-dlung	Yugli Pátkái	
Ti-groi		
Ti-keng	the Mbongkha Tirap, Dihing	Asam
Ti-ka	Pátkái	
Ti-ling	Yugli Pátkái	
Ti-lhú	over Pátkái	
Ti-loi	L B. Dimo	Up. Asam
Ti-mok	L. B. Disáng	Up. Asam
Ti-mok	several	
Ti-mú	a name of Dhansiri	

Ti-mún	L. B. Diséng	Up. Asam
Ti-mún	several	
? Ti-ma		Wrn. Hlassa
Ti-nga		
Ti-ngrai	R. B. Dihing	Up. Asam
Ti-ok	L. B. Diséng	Up. Asam
Ti-ok	L. B. Brahmaputra	Up. Asam
Ti-ka	trib. Di-bru	Up. Asam
Ti-korai	into Di-roi	Up. Asam
Ti-ki		Manipur
Ti-zi		Naga hills
Ti-ok	several	
Ti-pai		Cachar
Ti-pai	L. B. Dhansiri	
Ti-pak	Sibságar	Up. Asam
Ti-ping		
Ti-pling	Dihing	Up. Asam
Ti-pkai	Sankosh	
Ti-psí		
Ti-phu	Tiráp	
Ti-pú	near Moran	Up. Asam
Ti-púk	Sibságar	Up. Asam
Ti-pam	Wr. Jaipur	
Ti-ráp	L. B. Dihing	Up. Asam
Ti-ré	Sadiá	Up. Asam
Ti-reh	Mikir Hills	
Ti-ri	Sadiá	
Ti-ri	Tiráp	
Ti-rok	L. B. Dihing	Up. Asam
Ti-róng		
Ti-rú	L. B. Safrai, L. B. Diséng	Up. Asam
Ti-rú or Chi-ru	L. B. Jhanji	Up. Asam
Ti-sá	trib. Tiok and Diséng	Up. Asam
Ti-sáng	trib. Diséng L. B.	Naga hills
Ti-sing	Diséng	Naga hills
Ti-sú	Tiok	Naga hills
Ti-sung		
Ti-tulia	the Menga	Bengal
Ti-wá	R. B. Dinoi	Up. Barma
Ti-wáng	R. B. Dinoi	Up. Barma
Tsi-tsi or Si-si	Abor hills	Up. Asam

Tsi-k or Tsi-kha	(Sing.) Nam chik, (Kampti) Tsi-khak (Sing.) Kyoung (Burmese)	
Tsi-ngkaú	L. B. Irawadi	Bamo, Barma
Tsi or Si-mún		Siam
Si-bangi		Siam
Si-gon		Siam
Si-hinbum		Siam
Si-ngum		Siam
Si-tang or Thi thaung		Siam
Si-la	Lakhimpur	Up. Asam
Ai-ti	Barelly, Up. Manás	Asam
Bag-ti	Diyong-Dhansiri	Asam
Gar-ti	R. B. Brahmaputra, 89°	Asam
Ti-si	into Tiok	Naga hills
Ti-sta	Sikim	Bengal
Ti-shui	Lat. 29° 20′ Long. 111° E.	China
Si-ki	trib. of Tsu Lat. 26° 27′ Long. 118°	
Si-kiang	Canton River	China
Ghal-ti		
Gum-ti	Near Lakhnau	Oude
Gum-ti	Hill Tipperah	E. Bengal
Gulum-thi	Mishmi hills	
Das-ti		Baluchistan
Dind-di	Kistna	
Dun-di	Gulf of Katch	
Du-ti		
Jak-ti	Ripú, Duar	
Kun-di	L. B. Narbada	
Ku-ti		N. W. Ceylon
Kam-ti	Nam Kamti, Kamti hills	Asam
Ku-ti		Borneo
La-thi	Mishmi hills	
Lan-di	Peshawr	Indus
Ling-ti		Ladak
Milam-chi	W. Kosi	Nipal
M-thi	Brahmakund	
* Mú-thi	Mishmi Hills	
Ning-thi	the Dinoi	Up. Barma
Rap-ti	L. B. Ganges	Oude

* Moochee or Ummpance of Griffiths! see p. 120 "Selection of papers, relating to the Hill Tracts between Asam and Burma." B. S. Press.

Ra-ti		
Runga-ti		
Shigol-thi	Mishmi hills	
Sung-ti or thi		Bihar
Tap-ti	Kandish, western India	Surat
Thi-kak	L. B. Dialang, Mikir hills	Asam
Se-ti	Ghogra	W. Nipal
Ben-di	Lake Van	Asia Minor
Bulá-ti	Lat. 26°, N. Long. 63° E.	
Chider-ti	„ 52° „ 73°	
Ulen-ti	„ 52° „ 72°	
Ug-ti	„ 14° „ 112°	Lena L. B.
Di-jil-eh	the Tigris	
Di-ya-la	trib. L. B. Tigris	Baghdad
Yeve-si		Siberia
Sar { ju / chu	the Ghogra	
Du-rla	E. Monas	Bihar
Du-ba	Sonkosh	
Dui-ola		
Rang-ti		Lukhi Duar
Ghar-ti		Bhutan
Mur-ti		Bhutan
Rai-ti		Bhutan
Soi-ti		Bhutan
Kal-ti		Bhutan
Gal-ti		Bhutan
Yang-tsi	begins as Minac-chú	China
Much-kun-di	W. of India	S. of Bombay
? Lau-tsa or tsu	Cambodia or Mi-khong	
Wáshis-ti		S. of Bombay
Yung-thi	R. B. No, Dihing	Asam
Pi-ti		Haiderabad
Chom-tchu	the Arun of	Nipal
Sabarma-ti		N. E. Baroda
Ay-ya-wa-di	Irawadi	Barma
Ingdi	Sadia	U. Asam
Bag-mu-ti		Nipal
Gangu-ti	Alti hills	Catak
Bhag-ra-ti	the big water	Bengal
Shung-chu	L. B. Upper Indus	

Champa-muti	R. B. Brahmaputra the Múti	Bhutan
Lopra-cha-chú	the Subansiri	
Ha-su-ti		
Nari-chú	the Sanpú	
Haut-mo-ti		
Huri-arius-arisu		Herat
Horing-o-ti		
Isa-mo-té		
Lai-mo-té	near the Champa-muté	Bhutan
Mar-chang-di		Nipal
Mar-kun-di	trib. Indravati	Godavery
Sam-po-na-ti		
Sa-lun-di		Katak
Surati	Satpura, Gunga	
Sur-so-ti	Tonk	C. India
Zib-di	S. E. of Samarkand, trib. Oxus.	
Dyardanes	Brahmaputra, as known to the ancients	
Chú	Lat. 33° 30′ N. Long.	115° E.
Sin-shui	„ 27° „	109°
Tsin-chui	„ 36° „	112° 30
Chi-chui	„ 28° „	106°
Shwui R.	„ 38° 30′ „	103°
Tsing-chooi	„ 37° „	106°
He-shui	„ 33° „	105°
He-shwi	„ 32° „	103°
Kui-chui	„ 35° „	109°
Tsú R.	„ 26° „	119°
Si-ki	„ 26° „	118°
Si-ri	„ 26° „	112°
Choo-chew	„ 27° „	110°
Qui-shoo	„ 26° „	112° 30′
Hong-chui	„ 25° „	106°
Pe-shi	L. B. Mikong or Cambodia	
Ho-Ti	Lat. 23° Long.	103°
Shoo	„ 28° 30′ „	115°

Different forms of the Words, Tsi-chui-chú found in China, as per maps of recent date.

Si	Tchui	Soo
Tsi	Chui	Tsu
Chi	Chooi	Chu
Shi	Shwi	Choo
Tse	Shui	Shoo
Tsze	Shwui	Chew

List of Rivers named Kara su "black water" and Ak su "white water."

Kara su, ...	41° 30′	21° 50′	Gulf of Salonica.
Kara su, ...	40° 20′	22°	„ Do.
Kara su, ...	41° 30′	23° 10′	„ Contessa.
Kara su, ...	41° 20′	24° 30′	„ Gagos.
Kara su, ...	38°	37°	Asia Minor.
Kara su, ...	46°	34°	Crimea.
Kara su, ...	38°	40°	Asia Minor.
Kara su, ...	38° 30′	48°	Persia.
Kara su, ...	35°	49°	Persia.
Kara su, ...	45°	53° 30′	Caspian East Bay.
Kara su, ...	37°	54° 10′	Astrabad, Caspian.
Kara su, ...	45°	68° 72′	Kirghis steppe.
Kara su, ...	41°	69°	Taskent.
Kara su, ...	37° 30′	28° 30′	Asia Minor.
Kara su, ...	45°	35°	
Kara su, ...	38° 40′	35° 30′	Asia Minor.
Kara su, ...	39° 40′	40° 30′	Upper Euphrates.
Kara su, ...	39°	41° 30′	Upper Euphrates.
Kara tsu, ...	.....	.....	China.
Kara su, ...	.....	.....	Arctic Ocean.
Ak su, ...	42° 40′	27° 30′	West Coast Black Sea.
Ak su, ...	37°	31°	Gulf of Salatia.
Ak su, ...	37° 20′	37°	Upper Euphrates.
Ak su, ...	43°	74°	Into Chu River.
Ak su, ...	38°	74°	Upper Oxus.
Ak su, ...	42° 30′	78° 20′	Lake Issykul.
Ak su, ...	46°	78° 20′	Lower Dengiz.

Words for "Water" in the following Languages.

Lushai	Tui	Sonthali (Pergs.)	Dak
Kumi	Tui, or Tooi.	Mundari C. N.	Daa
Mru	Tui	Juang, Orissa	Dak
Kuki of Cachar	Tui	Kol Singbhúm	Da
Do. of Tipperah	Tui	Bhunuj	Da
Hamali of do.	Tui	Sonthali of Manbhum	Da
Do. of Cachar	Tui	Nimar	Da
Naga of Oboepore	Ti	Mehtu, Bilaspur,	Dab
Do. of Sibsagar	Ti	Mech	Daee
Do. of Haimong	chu	Cuch	Tika ti
Do. of Hatiguria	a chi	Magar, Nipal	Di
Do. of Miklai	a chin	Chipeng „	Ti & Di
Manipuri	Ising	Vayu „	Ti
Singphu	Insin or Ntsin	Gara	si
Auganú Naga	Dzu	Kachari	Doi
Dafla	Esi	Hojai	Di
Núri	a tse	Turki	sú
Abor	a se	Tibetan	chú
S. Mishmi	M'ji	Bhutéa of Towang	Sie
D do.	M'ji	Do. of Lo, East	echie
Songhtu, Burma	(H)tee	Mongolian	ussú
Poi „	Te	Chinese	soi, shui / chui, chú
Telain of Pegu	Dik		

Bulandshahr Antiquities.—By F. S. Growse, C. S., M. A., Oxon, C. I. E.
With a Note by Dr. Rájendralála Mitra, Rai Bahadur, C. I. E.

(With three Plates.)

The small town of Bulandshahr in the N. W. P. was selected in the year 1824 as the capital of a district, simply on account of its convenient central position. Since then it has thriven and increased greatly both in extent and population, though still of much less commercial importance than the flourishing mart of Khurja, some ten miles distant, which has the further advantage of being a station on the main line of the East India Railway. Its modern Muhammadan title of Buland-shahr (Higham) has been given to it in consequence of the great height of the artificial hill, on which stood the old Fort overlooking the stream of the Kálindi. This river is a tributary of the Jamuná and is commonly known by Munshís and European officials as the Káli-Nadi, the origin of the corruption being, that the two words are indistinguishable from one another when written in Persian characters, and Káli Nadi or 'Black River' suggests a more readily intelligible meaning than the Sanskrit patronymic Kálindi. The older Hindí name of the town was Baran, which is still retained as

the designation of the Pargana. Of its early history there are no written records, and little or nothing upon which implicit reliance can be placed has been preserved by oral tradition. Gold coins, however, bearing Greek and Páli inscriptions of the Bactrian dynasty, used to be not unfrequently washed down in the rains among the debris from the high ground of the old city,* and sufficiently attest that the place at that remote period was one of considerable wealth and importance.

According to tradition the founder was a Tomar Rájá, by name Parmál, in whose time and for several generations later the town was called Banchati. One of his successors, Rájá Ahibaran ('the cobra-coloured,' as his name is popularly interpreted), is said to have been the first to give his capital the name of Baran, intending thereby to perpetuate the memory of his own name. This appears to me very doubtful, or rather I might say plainly is obviously incorrect. Baran is certainly not the Sanskrit word *varna* 'colour,' but *varana*, 'a hill fort or enclosure;' and Ahibaran might thus mean 'snake-fort' or 'Nága-fort,' in the same way as the more famous Ahi-kshetra† means 'snake-land.' No Rájá Ahibaran, I should conjecture, ever existed, but the town may well have derived its name from being a stronghold of the Nága tribe.

Another explanation is, however, possible. Some twenty-one miles to the north-east of Bulandshahr, on the right bank of the Ganges, is the small town of Ahár, which (according to local tradition) is the spot where, after Paríkshit, the successor of Rájá Yudhishṭhir on the throne of Hastinápur, had met his death by snake-bite, his son Janamejaya, to avenge his father's death, performed a sacrifice for the destruction of the whole serpent race. Though still accounted the capital of a Pargana, it is a miserably poor and decayed place with a population, according to the last census, of only 2,414. It is evidently, however, a site of great antiquity. Part of it has been washed away by the river, but heaps of brick and other traces of ruin still extend over a large area, and I found lying about in the streets several fragments of stone sculpture of early date. The two best I brought away with me to Bulandshahr, as also a once fine but now terribly mutilated round pillar, which I dug up on the very verge of the high cliff overlooking the river. This is specially noticeable as having its base encircled with a coil of serpents, which would seem to corroborate the connection of the local name with the word *ahi*, 'a snake.' The principal residents of the town are Nágar Bráhmaṇs by descent, though—since

* The side of the hill where they used to be washed down in the rains was not long ago built up with masonry, to prevent any further cutting away. [See note, p. 272. Ed.]

† [Commonly *Ahi-chhatra* or "Snake-canopy," which appears to be the correct form; see A. Cunningham, *Anc. Geogr. of India*, p. 360. Ed.]

the time of Aurangzeb—Muhammadans by religion, who believe that their ancestors were the priests employed by Janamejaya to conduct his sacrifice, and that in return for their services they had a grant of the township and the surrounding villages. Immediately after this event it is said that the Páṇḍavas transferred their seat of local government from Ahár to Baran, and it may be that they then first attached the prefix *ahi* to the name of the town—so making it Ahibaran—in order to commemorate the circumstances of the migration. This would imply that the town was already in existence; and it might with much plausibility be identified with the Varanávata,* mentioned in the 143rd chapter of the first Book of the Mahábhárat.

All this, however, is conjectural and refers to a period so remote, nearly 1400 years before Christ, that no tangible record of it could be expected to survive to the present day. To come down to somewhat later times: the Bactrian dynasty, which flourished in the centuries immediately preceding our era, and the Gupta dynasty that succeeded it, have both left traces behind them in their coins;† the second also in a copper-plate inscription that will be mentioned further on. When the Tomars of Kanauj extended their sovereignty over all Upper India, it may be that the legendary Parmál ruled under them at Baran; but at the time of Mahmúd's invasion, in 1017, when Kanauj was still the capital, and Delhí in all probability had not yet been re-built, Baran was certainly the seat of a Dor Rájá, by name Hardatt, who—as stated in the Táríkh-i-Yamíni—averted its threatened destruction by professing to be a convert to Islám. His dominion extended at least as far as Merath and Kol, for at each of those places he had a fort, for which he paid a large ransom in money and elephants. Indeed from traditions extant at other localities it would seem that the Dor Rájá of Baran was the head of all that clan, which for about two centuries supplied rulers for the whole of the territory included in the present districts of Merath, Aligaṛh, and Bulandshahr, with parts of Murádábád, Mathurá and Eta. When Kol was finally reduced by the Muhammadans in the reign of Násir-uddín Mahmúd (1246-1265 A. D.), it was under a Dor Rájá, and the tower, which was wantonly destroyed by the local authorities in 1860, is generally supposed to have been erected in 1274 A. D. on the site of the principal temple of the old city. Among the

* General Cunningham, however, proposes to identify with the Varanávata of the Mahábhárat a village now called Barnáwa, in the Merath district. It has not yet been explored and it is therefore uncertain whether it is really an ancient site or not.

† [Two copper coins of Su-Hermaeus (Kadphises), one gold coin of Chandra Gupta II, and one gold coin of a dynasty intermediate between the Guptas and the Indo-scythians, presented by Mr. Growse, and now in the Society's Cabinet, were found on the hill side, mentioned on p. 271. See Proceedings, A. S. B. for June, 1878. Ed.]

Hindus, however, the tradition is somewhat different. They ascribe it to the Dor Rájá Mangal Sen, who gave his daughter Padmavati in marriage to the heir of Rájá Bhím of Mahrára and Etáwa, who soon after his accession was murdered by his younger brothers. The widow then retired to Kol, where her father built the tower for her: and possibly the Muhammadans may only have altered and added to it, to make it suit their own requirements. At Noh-khera in the Jalesar Pargana, which is now included in the Eta district, there is a tradition of a Rájá Bhím, who may possibly have been the person abovenamed; and at Noh-jhil in Mathurá are the remains of a temple, converted into a *darjáh*, which is said to have been originally built by one of the Dor Rájás of Kol. The capital had been transferred there, from Jalálí, by Mangal Sen's father, Buddh Sen. This latter was the son of Bíjay Rám (brother of Dasaráth Siñh, who built the Fort at Jalesar) the son of Náhar Siñh (the founder of the Sambhal Fort) the son of Gobind Siñh, who was the son of Mukund Sen, the son of Rájá Vikram Sen of Baran.

In 1194, the last of the Dor rulers of Baran, Rájá Chandra Sen, was killed while defending the fort against the army of Shaháb-uddín Muhammad Ghori. Before he fell, an arrow from his bow had slain one of the leaders of the Muhammadan forces, called Khwája Lál Ali, who is still reverenced as a martyr under the popular appellation of Lál Baraní. The site of his tomb is shown across the Kálindí, some 900 yards from the town, and it is from there that I brought the stone bearing the two inscriptions shown in the accompanying Plates VIII and IX. It is a singularly shaped block, being 2 ft. 5 in. long, 10 in. broad and 10 in. thick. The inscriptions are opposite one another, on the two long sides. It could not have been intended to set up the stone anywhere as it is, for it is difficult to imagine a position in which the two sides could be conveniently read, and it is also evident that preparations had been made for splitting the stone at half its thickness into two slabs. As the letters are of different sizes, it could not have been meant to join the two pieces together, and it is possible that they may have no connection with one another. The one begins with the invocation, *Om. Name Bhagavate Vásudeváya*, and in the first line may also be read the words *Kavalo nidrayá mílitákshah senáyah.....prabala-kala-kara.* In the first line on the reverse is apparently given the date, 1133. I fear that the obliteration is too extensive to allow of much information being elicited from what remains, even if it can be read. But I send it for publication in the Journal, where antiquaries may have an opportunity of seeing it; and, as it may throw some light upon its subject, I have put together the above brief sketch of the history of the locality where the stone was found.

As might have been expected from its nearness to Delhi, the Muham-

madans have long since made a clean sweep of the district and razed to the ground every building, whether secular or religious, that had been erected by its former Hindu rulers. I have now been over every part of it, and the few fragments shown in the accompanying Plate X are positively the sum total of all the antiquities that I have noticed. The six short pillars are of the mediæval Hindu period and may be ascribed to one of the Dor Rájás, about the year 1000 A. D. They had been buried under the steps of a small mosque on the highest part of the old town of Bulandshahr. In digging the foundations of a house on the opposite side of the same street was found the curious stone sculptured with three miniature temples. These are of different design, and if found separately, I might have been inclined to refer them to different architectural periods. But similar forms may be seen in conjunction on the front of the temples at Khajuráho, which are known to be of the tenth century A. D., and the very archaic type of one of these designs must be attributed to religious conservatism. The high mediæval column is one of a pair found a few years ago on the margin of what was formerly a large masonry tank outside the walls, said to have been constructed by Rájá Hardatt, or one of his descendants. The companion column was sent off to Merath, 40 miles away, by the Muhammadan gentleman into whose possession it had come, to be worked up into a house he was building there. The one shown in the plate I rescued from his stables, where it had been thrown down on the ground and was used by his grass-cutters to sharpen their tools on. The circular pillar with the coil of human-headed snakes at the base is, as already mentioned, from Ahár; as also the mediæval door-jamb and the block, that supports it, carved with rows of temple façades in the style of the Násik caves. This last is probably the oldest of the group. The second door-jamb found in the court-yard of the mosque at Bulandshahr is comparatively modern. More intimate local knowledge may possibly bring to light a few other ancient remains, but they are not likely to be numerous; for stone, which had to be brought from a considerable distance, has always been very sparingly used in the neighbourhood, while brick is a material, which however well worked must ordinarily cease to possess either interest or beauty when reduced to ruin. The only other ancient inscription, of which I have heard as belonging to the district, is the one of which a transcript and translation by Dr. Rájendralála Mitra were given in Vol. XLIII of the As. Society's Journal. This is dated in the reign of Skanda Gupta, in the year 146, which, if the Sáka era is intended, would correspond with 224 A. D. It was dug up at the village of Indor, in a *khera* of unusual elevation and extent, which adjoins the high road between Anúpshahr and Aligarh, about 10 miles from the former town. In the inscription

the name of the village is given as Indrapúrá; and, by a curious coincidence, the very same Number of the Journal contained an article of mine on local etymology, in which I had demonstrated, by an application of the rules of the Prákrit Grammarian, Vararuchi, that a Sanskrit word, such as Indrapúrá must, in the natural course of phonetic decay, become Indor in the modern dialect. On the opposite, that is, the western side of the district, there is an almost continuous succession of deserted *kheras*, along the bank of the Jamuná, from the village of Begamábád to the town of Dankor, a distance of about 20 miles. The most southern of these is called Hastaur, which is strikingly suggestive of Hastinápúr, an off-shoot perhaps from that ancient capital; while another, as Rájá Lakshman Siñha informs me, goes by the name of Kúpsar. Begamábád is quite of modern origin, having been founded by the Begam Samrú of Sárdhana; but Dankor is an ancient site and is supposed to derive its name from Drona, the tutor of the young princes of Hastinápúr. He has a tank and temple in the town still called after him, Dronachár. In the course of the next cold season I hope to visit all these *kheras*.

Note by Dr. Rájendralála Mitra.

The inscriptions are so extensively obliterated that it is impossible to deduce from them connected narratives. No. 1 comprises 10 lines, every one of which has two or three lacunæ, and several doubtful letters, but from what remains the purport of the document is clear enough, a grant of land for the worship of a divinity whose name is not apparent. The land was bounded on the west by Chhandi —? on the south by Bhijalibháṭa; on the north by a field named Mahardivá ——. The donors were a great commander *(mahásámanta)* named Srí Vadana, who was a Nága rájá and son of Amṛita rájá, and one Náráyaṇa, son of a householder and banker named Bháshvika. The date is some undecypherable day in the waxing moon of the month of S'rávaṇa (July—August) of the Samvat year 1180 = 1224 A. D. of which the words *as'íti adhikeshu* "eighty above" are distinct. The first and second figures I read doubtfully. The last two lines contain imprecatory Puranic verses against resumption of grants of land. I annex a transcript of the portion legible to me.

No. 2 is also a deed of gift and is dated on the 5th of the month of S'rávaṇa of some undecypherable year. It was granted by an "Adhirája" or paramount sovereign, but his name is lost. A transcript of the few words that are legible to me is annexed.

Mr. Growse is quite right in supposing the two records to be unconnected with each other, though the month of the date is the same. The stone was not intended to be set up anywhere, but to be preserved in the archives of the temple as a title-deed.

No. 1.

१।—संवत्सरैकादशेषु (?) अशीति अधिकेषु—आवणमास शुक्लपक्ष——

२।————महासामन्त श्रीवदन श्रीअमृतराजपुत्र तथाभाव्विक वणिक् ग्रहपति—

३।—स्तस्य पुत्र श्रीनारायण ?—स्वकीय पननक्षेत्र केदारभूमी गृहीता वाटिका कृत भागभोगक—

४।—वहि पश्चिमदिग्भागे कृण्डी—

५। भिजलीभाटं दक्षिणे—महर्दिवा नामक्षंत्रं युन यु—

६।+उत्तरे भउटपत्रा पातं——क्षत्र केदार भूम्यात्मीय खां शं + +

७। श्री——देवस्य पूजाद्यर्थं श्रीवदन श्रीनागराजेनात्मीय स्वभोगभुज्यमान वृद्धवरेण्यश्च ट—

८।—पननवृद्धवरेण्य कुणीवाटं उत्तरेण दक्षीदित्यमयुक्ता सत्क वर्त्तमान भि—

९। वज्रभिर्वसुधाभुक्ता राजभिः सगरादिभिः। यस्य यस्य यदा भूमिस्तस्य तदा फलं। षष्ठीवर्षसहस्राणि स्वर्गे + +मोदति

१०। भूमिदः उक्तिानुमन्ता च—

No. 2.

१। ॐ नमो भगवते वासुदेवाय॥ वक्षःप्रान्ते म्रियानः शिथिलित कवलो निद्रया मीलिताक्षः सेनायाः शूलिशूनापतल कलक—

२। श्रीविना यस्य पा————विकसिते श्रावणे पक्षम्यां

३। धिराजा श्री——

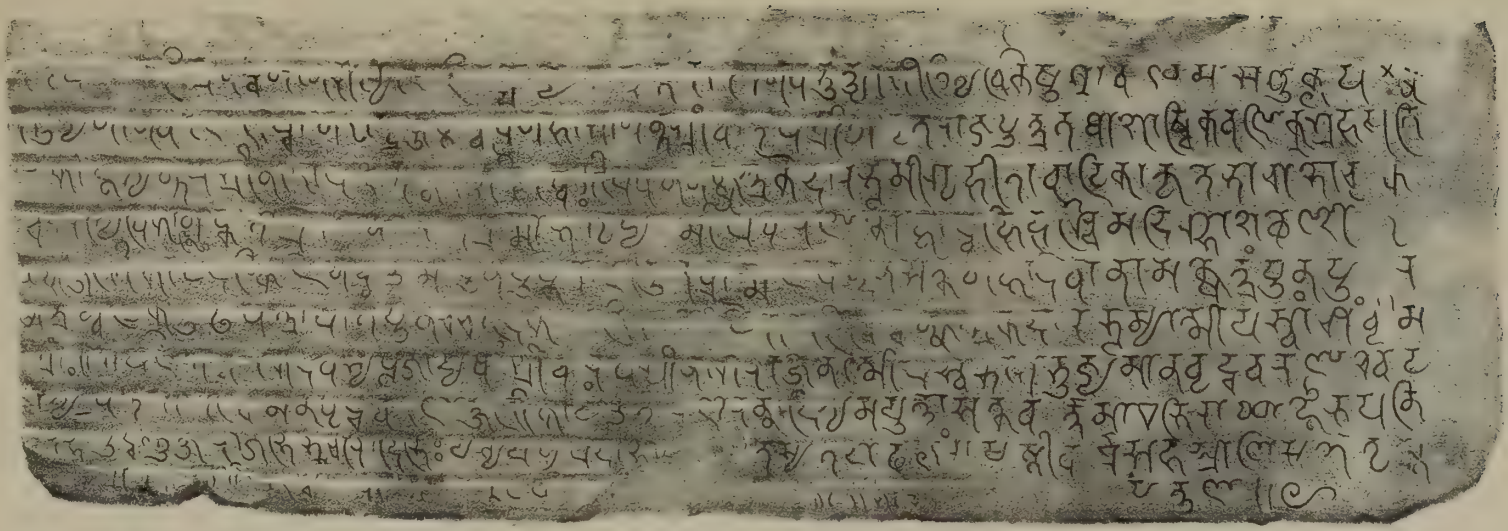
४।————वह्लनध्यावसीनन्यान् दधाति——

५।————इन्दुमती——

६।——मन्तव्यं मातापि—

७।—स्वभोगभुज्यमान—

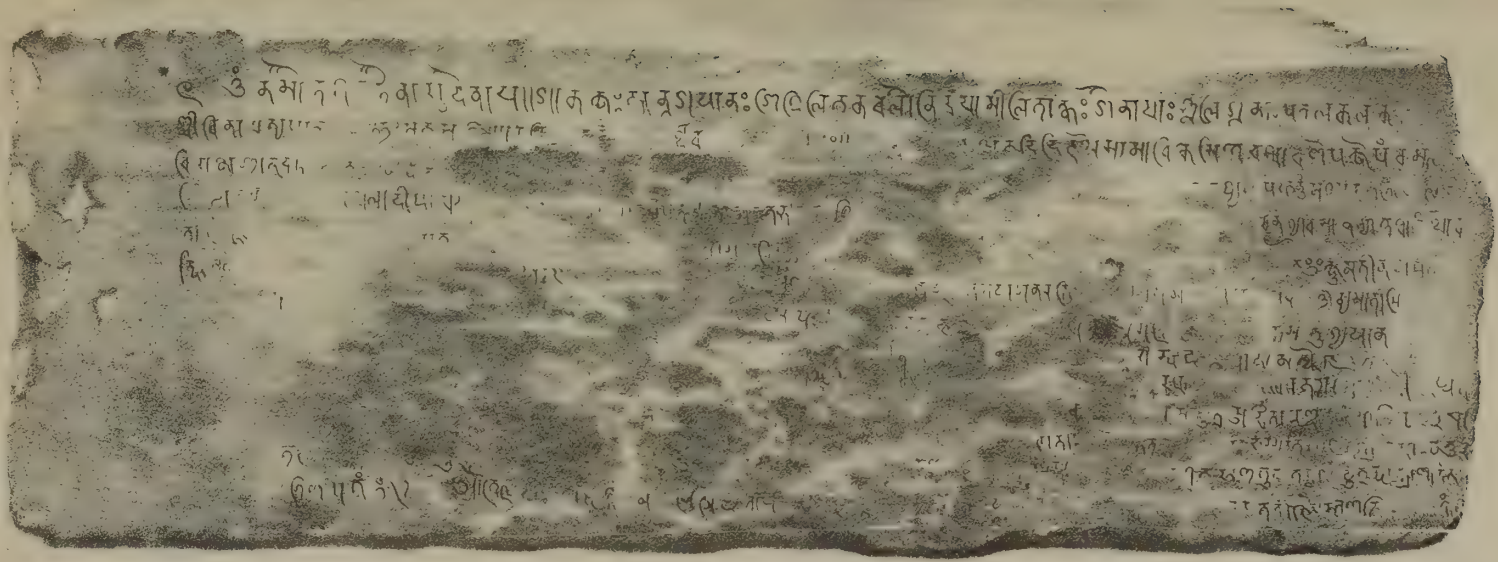
८।——कृत्वैतत्



Calcutta

INSCRIPTION FROM BULANDSHAHR

(from a photograph)



N Newman & Co Lith

Calcutta

INSCRIPTION FROM BULANDSHAHR

(from a photograph)



BULANDSHAHR ANTIQUITIES
(from a photograph)

The Copper Coins of the old Mahárájás of Kashmír.—By* C. J. Rodgers.

(With two Plates.)

Some years ago General Cunningham wrote for the Numismatic Society of London, of which he is a most distinguished and worthy member, a Paper on "*The Ancient Coinage of Kashmír.*" That paper is now out of print, and as it was written 36 years ago, the present generation cannot obtain it. It identifies "no less than 18 Rájás of Kashmír extending from *Toramána* to *Jaga Deva*, who reigned from about A. D. 500 to 1200." In the present paper I propose to cover less ground and to start with Avanti Vermá or Adityá Vermá, the first Mahárájá of the Utpala Dynasty, which commences from the year 875 A. D. The coins are all from my own cabinet. In the majority of instances where I have duplicates I have chosen that coin for my plates, which has the greatest number of legible letters on it. The accessories which are very interesting have been made to give way to this, as I regard the identification of the coin as of primary importance.

As yet I have come across only two silver coins of any of these Mahárájás. They are of Didda, who was a *Maharání*, and of Kalasa. These two coins are of much finer execution than any of the copper ones. The reverses have different letters on them. Nothing but photographs of them would do them justice. I reserve them therefore for a separate notice. They are round, but thicker than the copper coins and are much less worn. The silver coins of the Sulṭáns of Kashmír are square. General Cunningham informs me that he has two gold coins of *Harsha*. I believe they are the only gold coins known to exist of any one of the old Kashmír rulers.

The following is the list of the rájás as given in Prinsep's Tables.—(Those kings whose coins are in this paper are in italics.)

Utpala Dynasty.

A. D.	
875.	Adityá or *Avanti Vermá.*
904.	*Sankara Vermá.*
922.	*Gopala Vermá.*

* I am much indebted to General Cunningham for help in reading the coins of the Mahárájás. My cabinet contains several not before published both in the Sulṭáns and Mahárájás. I have several older coins, such as Vasukal, Milukal, Pratápáditya, Vininyá, Durlabachá.

Sankata.
924. *Sugandha Ráni.*
926. Pártha.
941. Nirjita Vermá.
942. Chakra Vermá.
952. Sura Vermá
953. Pártha, a second time.
954. Chakra, a second time.
954. Sankara Verdhana.
956. Chakra Vermá, a third time.
957. Unmatti Vermá.
959. Sura Vermá, a second time.

Last or Mixed Dynasty.

960. *Yaskara Deva.*
969. Sangrama Deva.
969. Parvagupta.
971. *Kshemagupta.*
979. *Abhimanyu.*
993. *Nandigupta.*
994. *Tribhuvana.*
996. *Bhímagupta.*
1001. *Didda Ráni.*
1024. *Sangrama Deva.*
1032. *Ananta Deva.*
1054. *Kalasa.*
1062. *Harsha.*
1062. Udayama Vikrama.
1072. Sankha Rájá.
1072. Salha.
1072. *Sussala.*
1088. Mallina.
1088. *Jaya Siñha.*
1110. *Paramána.*
1119. Bandi Deva.
1126. Bopya Deva. (?)
1135. Jasu Deva.
1153. *Jaga Deva*, &c. &c.

The list goes on to 1298. But I have no coins of later kings than Jaga Deva. It will be seen, however, that out of these two lists alone I have given the coins of 19 kings. I have given another coin which reads *Java Deva Deva.* This must be a coin of a king who reigned near to the time of Jaga Deva. He must be either an usurper or a man who is known to history under some other name. I give with some diffidence another coin. I attribute it to Bopya Deva. Of this man it is written that his folly exceeded all bounds. The historians give us the following specimen of his lack of sense, which after all might have come from the banks of the Shannon. One day Bopya was taking his ease on the river. Looking over the side of the boat he saw a reflection of himself in the water. He smiled. The reflection smiled. He grew angry. It grew angry. At once he threw a stone which I suppose disturbed the water and disposed of

the mimic for the time. On looking at his finger Bopya discovered that he had lost his ring. Nothing disconcerted he took his stick and threw it on the running stream and ordered the boatmen to row home. Arrived there he ordered his servants to go and bring his ring telling them that he had put his stick on the water where it fell. One is reminded on reading this of the Irishman who dropped the ship's tea-kettle overboard in Dublin harbour. He cut a mark in the side of the ship where it fell. When the ship arrived off Cork, he asked the Captain whether if anything were lost he knew where it was? We may imagine the answer. Pat said, "Well, you know the tay kettle is at the bottom of Dublin harbour, and the ship's side has a mark on it to enable us to judge where it fell."

I regret that up to the present I have seen no coin of Ratangirí who is said to have been the first Sulṭán of Kashmír. He was a second Solomon. One day two mares foaled. The foal of one died. The foal of the other took to both mares with equal affection. The owners could not tell whose foal had died and whose was the living foal. They came to Ratangirí. He ordered them to throw the living foal from a bridge into the water, the mare that followed it was to be adjudged the mother.

Of Yaskara it is written that in his days thieves and highwaymen were nowhere to be seen. Shops and houses were left open at night. It seems a pity that this king, whose rule was as effective as that of our own Alfred who preceded him by only half a century, should have seen fit to leave the scene he had graced so long, to hide himself like a second Charles V. in a monastery, or rather I expect in some jungle as an ascetic.

Now for a few words about the coins themselves. Both obverse and reverse have crowned figures on them. The figure on the obverse is probably that of the king. But the face is in nearly every case more like that of an ass or bullock. There are large earrings in every instance. Round the waist are apparently two bands. The waist compared with the shoulders and chest is very thin. Mountaineers to the present day wear a rope round the waist. This figure is always seated, the legs being disposed of in a peculiar fashion. Sometimes they are hidden in the skirts, sometimes bare, and in one case the ancles have anklets on them (see figs. 22 and 24). The name comes on the obverse, and is generally divided into two parts by the figure. Sometimes *Srí* is present on the left of the figure and the name commences on the right. Sometimes *Srí* and part of the name are to the left and the remainder of the name to the right. Sometimes *Srí* is omitted and the name occupies both sides of the figure. The figure has a canopy over the crown. This is shown very well in some specimens of *Jaga Deva*, lately obtained from a heap of about two hundred. (See figs. 23, 24.)

The reverse has a figure crowned. But the earrings give way to four dots which may represent jewels in the ear as worn by women. This figure

is standing. The skirts are arranged peculiarly. The drawers resemble the broad and flowing drawers worn by women. The skirts are about as high as the knee. The legs are in some cases visible, with ties of an immense size to the boots: in other cases the legs seem to be naked. The waist is supported by a cross belt. The right hand contains a wreath. The left hand holds a trident or lotus. The shoulders seem to be covered with a cape which sticks out very much like epaulettes. The left hand side of the coin generally has a circle of dots in it, over the right hand of the figure. On the right hand side of the figure the remnants of the titles and names are generally found, under the left arm, such as *vermá*, *gupta*, *deva*, *rájá*. In one case the *d* of *deva* comes on the left hand side of the coin.

I have not as yet been able to trace anything like a sign approaching to a date on any coin.

In scarcely any case is there any difficulty about the identification of the coin; the names are very easily made out.

Many of the coins have several types. The coins of Gopala, Jaya Siñha, Sussala, Jaga Deva are of several kinds. The last mentioned, however, has the most. In only one case have I come across a smaller coin than the ones in the plates. The coin I have is evidently a half of whatever these coins were called. It is one of *Kalasa's*.

Having given so much by way of preface, I now give a table of the coins represented in Plates XI and XII, showing exactly the inscription on each coin and its position, whether on the right or left of the obverse or reverse figure. In every case I speak of the right and left of the coin after the usual numismatic fashion. When speaking of the figure of course the right hand of the figure is on the left of the coin and *vice versâ*.



W. Newman & Co, Lith: Calcutta.

COINS OF THE MAHARAJAHS OF KASHMIR.



W. Newman & Co, Lith Calcutta.

COINS OF THE MAHARAJAHS OF KASHMIR

No. of Figure.	Kings' Names.	Obverse Inscriptions.		Reverse Inscriptions.		Remarks.
		Left.	Right.	Left.	Right.	
1	Avanti, ...	अ	व		देव	Duplicate. British Museum.
2	Sankara,.....	—	स ङ्क		व र्म	Rare.
3	Gopala, ...		गोपल		व र्म	Rare.
4	Sugandha, ...	खी	सु गन्ध		व	Rare.
5	Yaskara,.....	य	स्क		देव	Duplicate. General Cunningham.
6	Dikshema, ...	दि	क्षे म		गु प	Common.
7	Abhimanyu, ...	अ	भि म		गु प	Duplicate. General Cunningham.
8	Nandigupta, ...	न	न्दिगु		प	Rare.
9	Tribhuvama, ...	त्रि	भु व		गु प	The gift of General Cunningham.
10	Bhímagupta, ...	भी	म गु		प	Rare.
11	Didda Ráni, ...	सी	दि द	—	—	
12	Sangrama, ...	स	ङ्ग म		ज देव	Common.
13	Ananta, ...	अ	नन्त र		ज द व	Common.
14	Kalasa, ...	क	लसर		ज द	Common.
15	Harsha, ...	ह	र्ष रज		द	Common.
16	Sussala, ...	सु	स्स ल		द व	Rare.
17	Jaya Siñha, ...	ज य	सि ह		द व	Rare.
18	Paramána, ...	खी प	र म		द व	Duplicate. General Cunningham.
19	Jaga Deva,.....	ज	ग	द	व	Common.
20	Java Deva,.....	ज व ा	दे		द व	Duplicate. J. D Tremlett, Esq.
21	Bopya Deva, ...	प्य*	द व		दे व	*Perhaps.
22	Not identified, ...	—	खी	—	ऊ*	*Perhaps.
23	Jaga Deva,.....	ज	ग द व			Obverse only.
24	Jaga Deva,.....	ज	ग			Ditto.
25	Jaga Deva,.....			दे	व	Reverse only.
26	Jaga Deva,.....			—	—	Ditto, showing circle of dots.

The Copper Coins of the Sultáns of Kashmír.—*By* C. J. Rodgers.

(With a Plate.)

In nearly all the bazaars of the large cities of the Panjab large quantities of old coins of a peculiar stamp and bearing signs of much usage are obtainable. The obverse of these coins has a bar, with central knot, running from right to left of the coin. This central knot is in some cases elaborate, in others it degenerates into a carelessly formed circle. Above the bar come the words السلطان الاعظم. The ن of Sultán is nearly always hung on the ل of that word, while the ع crosses the field completely. Below the bar the name of the king is written, occupying as a rule the whole space. In every case, except that of Zain ul-Ábidín, the word *Sháh* is added to the name. The reverse is occupied completely with the words ضرب کشمیر در شهور سنه, and the year is added in Arabic words. Were these coins obtainable in anything like a legible form, they would be exceedingly valuable in settling the chronology of Kashmír. But hitherto, in spite of most extensive search, only poor specimens of most of the kings have been obtained.

The silver coins of these Sultáns are all, so far as I know, *square*. Two of them, Muhammad Alí Sháh and Muhammad Yúsuf Sháh, were published by Mr. Delmerick in J. A. S. B., Pt. I, 1876, Pl. VI, figs. 24 and 25. I have silver coins of the above Muhammad Sháh, Ismaí'l Sháh, Zain ul-Ábidín, Nádir Sháh and Akbar. General Cunningham has others, amongst which are Husain Sháh and Humáyún. In all, this prince of Indian Numismatists has the silver coins of ten Sultáns. They are all square and are exceedingly rare.

The copper coins with which this paper has to do are common as a rule. But some of them are of necessity rare. Zain ul-Ábidín was the only one who seems to have deviated from the track of the cross bar and central knot. The reverses of his coins exhibit also a divergence from the usual form. They have the word ضرب crossed by the word کشمیر and around these words is a quarterfoil lozenge with elaborate knots in the outer corners. Some of this king's coins conform to the bar and knot. I have not given specimens of these, as with so many other kings having them, they were not needed. Some of this king's coins are *brass*. See No. 2.

After the time of Akbar the reverses contained the year in *Persian* instead of Arabic. The coins of Husain Sháh and Yúsuf Sháh exhibit these peculiarities. One of the three coins I have of Akbar has on the reverse ضرب داد الهي ٣٨, where the year is Akbar's Iláhísan. I have said above that I have a square silver coin of Nádir Sháh. Who this king was I do

not know. But I have three copper coins of his, with the name on, beyond a doubt. On the silver coin too the name is unmistakeable. But history is silent about him, and no list of Kashmír kings that I have seen contains his name. Unfortunately the year is altogether rubbed off. Archæological explorations in Kashmír should reveal something about this Sultán. It is possible that some of the Sultáns may have rejoiced in several names, and that the one by which he is known to historians is not the one on the coins. We have several instances of this in Indian numismatics. I have not given this king's coins, though I possess three of them. I reserve them for further light, research may throw upon them.

By me just now I have a coin of Dr. Stulpnagel's. It is of a Kashmír Mahárájáh. It reads Srí Pesuta Jáyá Siñha. This has not yet been identified. I have one of my own which reads *Java Deva Deva.* This I am going to publish though not able to identify the coin. Further study of these coins will give us fuller results. Hitherto numismatists have somewhat neglected them. They (the coins) are filthy looking, very much worn and being nearly illegible are too hard nuts for one to crack in leisure hours, inasmuch as the lines left are so hard to make out that only long study enables any one to feel any certainty about any point. The Kashmír Sultáns as given in Prinsep's Tables are as follows :—

A. H.	A. D.	
715.	1315.	Shams-uddín Sháh Mír.
750.	1349.	Jamshed.
752.	1351.	Alísher Ala-uddín.
765.	1363.	Shaháb-uddín.
785.	1386.	Kutub-uddín, Hindal.
799.	1396.	Sikandar, Butshikan.
819.	1416.	Amír Khán, Alí Sháh.
826.	1422.	Zain ul-Ábidín.
877.	1472.	Haidar Sháh.
878.	1473.	Husain Sháh.
891.	1486.	Muhammad Sháh and Fath Sháh were contending for the throne during these years.
902.	1496.	
911.	1505.	Muhammad Sháh reigned *four* times and Fath Sháh *three.*
942.	1535.	Názuk Sháh. (Humáyún.)
948.	1541.	Mirzá Haidar Daghlat.
960.	1552.	Ibráhím.
963.	1555.	Isma'íl.
964.	1556.	Habíb.

971. 1563. Husain Sháh.
986. 1578. Yúsuf Sháh.
997. 1588. Annexation of Kashmír by Akbar.

Up to the present I have seen neither silver nor copper coins of one of the first five Sultáns. The coins in our Plate XIII begin with *Sikandar Sháh.*

No. 1. This coin has the name and titles of the king with bar and knot on the obverse, and on the reverse the legend in Arabic of *Zarb-i-Kashmír fi shahúr i san.* But the year is not legible. There are many features of the reign of each king which it would be interesting to notice, but I will confine myself to the coins.

No. 2. *Zain-ul Ábidín.* Obverse. Name and titles of king, with portions of a knot at the top. Reverse. The words *Zarb Kashmír* in a quarterfoil, crossing each other. Date on obverse illegible.

No. 3. Same king. Obverse. Name and titles of king, without bar and knot, in a doublecircle, surrounded with a circle of dots. Reverse. *Zarb-i-Kashmír fi Shahùr i san i ahd wa arbaín wa Samánmáita* = 841 A. H.

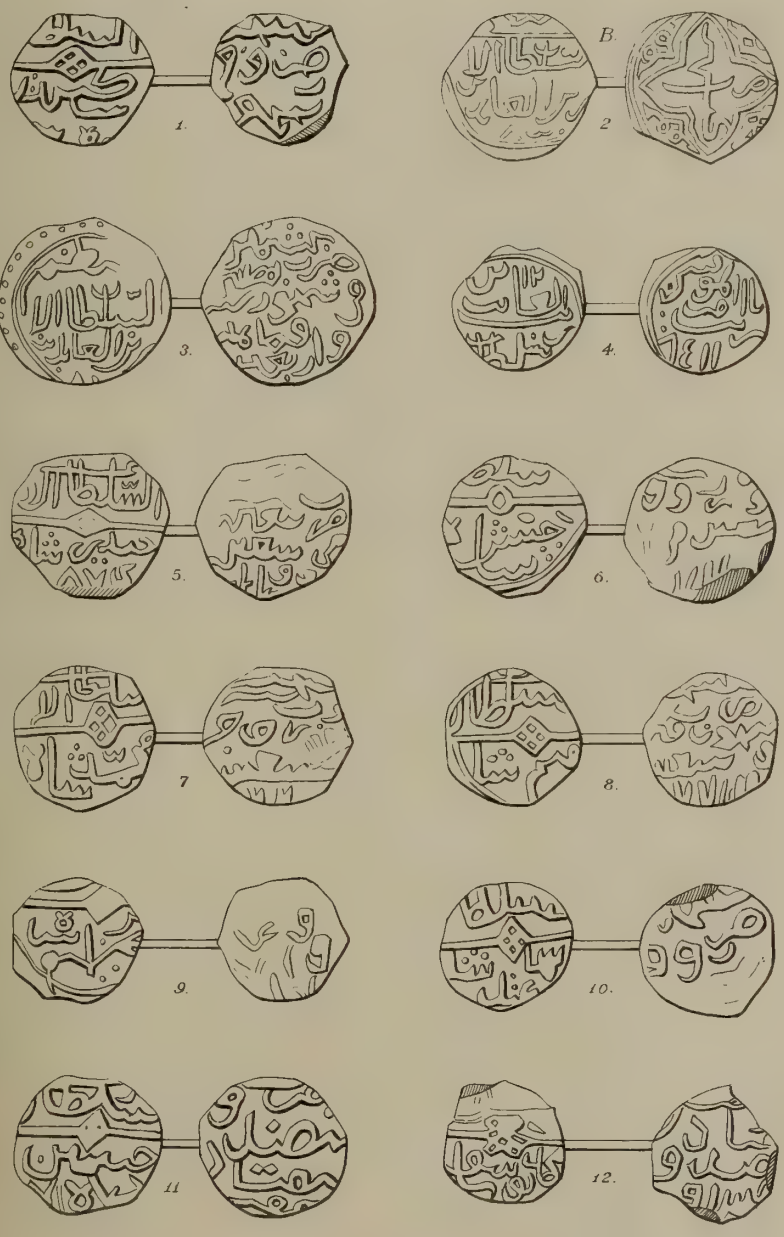
No. 4. Same king. Obverse. Zain ul-Ábidín Sultán, no bar or knot. Reverse. *Zarb Náib i Amír ul Momanín.* 851 A. H.

This king was to Kashmír pretty much what Fíróz Sháh and Akbar were to India. He was a great builder and poet. He got the Mahábhárata translated into Persian and was a patron of learned men. The rulers of Mecca and Egypt, of Gílán, Írán and Túrán kept up correspondence with him. He is the only Sultán who calls himself the *Náib* of the *Amír ul-Momanín.*

No. 5. *Haidar Sháh.* Obverse. Name and titles of king with bar and knot and the year illegible. Reverse. *Zarb.....fi.....sabaín* wa *samánmáita* = 87—. The 4 on the obverse is distinct; this according to the tables, it ought to be 7. I have two coins of this king. The reverses give no help in solving this difficulty. The second coin has the year on the obverse worn off.

No. 6. *Hasan Sháh.* Obverse. Name and titles of king, bar and knot. Reverse. The usual legend, but illegible.

No. 7. *Muhammad Sháh.* This man began to reign when he was seven years old. Fath Sháh the grandson of Zain ul-Ábidín came from India and took the throne. These two kings went on fighting for the supreme power for many years. Fath Sháh gained the throne three times but Muhammad Sháh at last drove him away and sat for the fourth time on the throne of his father. The coin has on the obverse the usual name and titles with bar and knot. Reverse. The year looks like 895. If so this coin was struck during the first period Muhammad reigned.



W. Newman & Co, Lith: Calcutta

COPPER COINS OF THE SULTANS OF KASHMÍR.

No. 8. *Fath Sháh.* Obverse. Name and titles with bar and knot. Reverse. Struck in Kashmír in year 897. There is some doubt as to the reading of the 7.

No. 9. *Ibráhím Sháh.* Obverse. Name and titles, with bar and knot. Reverse. All illegible, but date &c.

No. 10. *Isma'íl Sháh.* Obverse. Name and titles, with bar and knot all in good preservation. Reverse. A complete muddle of remains of date illegible: remnants of *Kashmír* legible.

No. 11. *Husain Sháh.* Obverse. Name and titles, with bar and knot and probably remains of date. Reverse. *Zarb Nuhsad wa haft wa haftád* = 977 A. H. This coin is in splendid preservation.

No. 12. *Muhammad Yúsuf Sháh.* Obverse. Name, titles, bar and knot as usual, but titles illegible. Reverse. *Nuhsad wa shash wa hashtád* = 986. This coin is very little worn, but it was struck on an irregular and ill-prepared piece of copper.

I regret very much that the *years* of the coins are so unsatisfactory in so many instances. The names, however, afford no ground for dispute. They are all easily read, though in some cases at first sight they are not decipherable. I found I had several of Isma'íl's coins when I could read one. One's power of reading progresses as one's acquaintance with the coins increases. I have still several which up to the present I have not made out satisfactorily. These together with the coins of Nádir Sháh, a coin of Názuk Sháh (so I read it, I want others to help me read this one) and the coins of Akbar struck in Kashmír with the bar and the knot must stand over for another paper.

Observations on some Chandel Antiquities.—By V. A. Smith, B. A., C. S., *and* F. C. Black, C. E.

(With six Plates.)

The careful and accurate descriptions of the Chandel remains at Khajuráho and Mahoba, published by General Cunningham, might be supposed to have exhausted the subject of which he treats, and to leave no gleanings to be picked up by amateur hands. We have, however, in the course of several years' residence in the Hamírpur District, in which Mahoba is situated, and after careful inspection of the buildings at Khajuráho, collected a few notes, which may, we venture to think, form a useful supplement to the more systematic record of the Director of the Archæological Survey.

The zamíndárs of most villages in the small native state of Chhatarpur, in which Khajuráho is situated, are said to be Kurmís, Káchlús, or Bráhmans, but in Khajuráho itself we were surprised to find that Chandel Thákurs are still the zamíndárs. They comprise only a few families* and claim to be *bhumiyán* or aboriginal, stating, however, that their ancestors came from Maniyá Garh,† which is the ancient fort of the town of Rájgarh, situated on the Ken, a few miles from Chhatarpur.

We were informed that Chandels are not found as zamíndárs in any village except Khajuráho, though scattered families exist elsewhere. The Chandel zamíndárs who are part proprietors of M. Urwára in Pargana Mahoba came from Ajnar in Pargana Jaitpur, whence they were expelled by Lodhís and Bráhmans in the time of Jagatráj Bundela (*circa* 1750 A. D.); and the Chandels who have a share in Mauza Kaimaha of Pargana Mahoba immigrated at a late date from Sheorájpur in the Cawnpore District.

We know of no other Chandel proprietors in the Hamírpur District, and the zamíndárs of Khajuráho may therefore claim to be the only local representatives of the ancient ruling clan who still retain an honourable position.

At Mahoba we have been told that the Chandel royal house is now represented by Jaimangal Singh of Gidhaur and by other Rájás in the vicinity of Gyá.‡

We have repeatedly made efforts to obtain specimens of the Chandel coinage, of which so few pieces have been found, but up to the present our enquiries, both at Khajuráho and elsewhere, have been unsuccessful.

The rarity of the coins of a dynasty which flourished for four centuries may perhaps be plausibly accounted for by the hypothesis that the Chandel coinage was called in by the Musalmáns.

The native official with our camp told us that coins which he spoke of as *dukrí* (the word apparently meaning simply 'old') had been found at Khajuráho and sent into Chhatarpur, but at the latter place, when we tried to get a glimpse of them, we were put off with various excuses. These coins were stated to have borne illegible legends, and were pronounced by the local goldsmiths to consist of a mixture of silver, brass and copper.

* Eleven families according to General Cunningham who mentions their existence.

† Maniya Deo is the tutelary goddess of the Chandels. *Vide* J. A. S. B., XLVI. Part I, p. 233, and Arch. Rep. VII. 44.

‡ For a brief history of the Rájás of Gidhaur see Statistical Account of Bengal (for the Monghyr District) Vol. XV, pp. 71, 72.

We also heard that minute leaflets* of gold had been found in the fields about Khajuráho on more than one occasion. They were described as being very small, and each pierced with a hole about the size of a barley-corn.

The Political Agent at Nayágaon (Nowgong) informs us that he has never heard of the discovery of any coins at Khajuráho, but there can be little doubt that they must be found from time to time, though their discovery is naturally concealed by the finders who are afraid of being deprived of their prize.

The buildings at Khajuráho have all been noticed by General Cunningham except a small flat-roofed temple, which now forms part of the dwelling house of a zamíndár in the village. This edifice is of no special interest, and a defaced inscription on one of the pillars does not seem to be valuable.

We did not succeed in bringing to light any other new inscription. The brief pilgrim's record on one of the pillars of the Ganthai temple, which is not mentioned by General Cunningham, is noticed in our remarks on that building.

We were told that the fragment of an inscribed stone was lying in one of the zamíndár's houses, but were prevented from seeing it. So many sculptures and other objects have been carried off from Khajuráho by visitors and pilgrims that the people are now very unwilling to show anything which is likely to excite the cupidity of an antiquarian or devotee.

General Cunningham (II. 434) describes a 'magic square' cut on the right jamb of the door of the Jinanáth temple and observes—"The figure "8 is remarkable for an additional stroke on the left side, which I take to "be a mark of antiquity, as it is a near approach to the figure in my "Suhaniya numeral inscription." It is, however, perhaps worth while to note that this additional stroke is cut to a depth much less than that of the rest of the figure, and that it is scarcely discernible on the stone though clearly visible in a rubbing (Plate XIV). The other figures too of the square are almost identical with the modern forms, and the antiquity of the sculpture may well be doubted.

It is much to be regretted that the short inscription of eleven lines on the left jamb of the door of the same Jinanáth temple has not been published in facsimile and translated in full.

General Cunningham has given two abstract translations of it (Arch. Rep. II. 433 and J. A. S. B. XXIX, p. 395), and its date,† on which doubt

* Particles of gold-leaf are found among the ruins of Manikyála. (Cunn. Arch. Rep. II. 170.)

† For a rubbing of this date, see Plate XV.

was at one time thrown, may be accepted as certainly being Samvat 1011, but the reading of the Rájá's name is still unsettled, General Cunningham being in doubt whether the initial letter is *Dh* or *Gh ;* it looks quite as like *Sh*, and is certainly different from the ordinary Kutila form of *Dh.*

Not only this short inscription, but all the leading Chandel inscriptions require to be carefully edited. Of the three great inscriptions at Khajuráho one only has been published at length, *viz.*, that dated 1056 Samvat, now built into the wall inside the entrance of the Vis'vanáth temple. This record was translated by Mr. Sutherland (J. A. S. B., for 1839, Vol. VIII, p. 159), but with many errors, some of which have since been corrected by General Cunningham. (Proc. A. S. B., for 1865 (1) p. 99.)

The other equally large inscriptions, *viz.*, that dated 1058 Samvat, now built into the temple wall opposite that above mentioned, and that of Rájá Dhanga, dated 1011 Samvat, now built into the wall on the right side of the entrance to the Chatarbhuj temple, are referred to in the Archæological Report (II, pp. 423, 426), but have never been published or translated, and we understand that other inscriptions of the Chandel dynasty, concerning which nothing has yet been made public, are in General Cunningham's hands.

The main outlines of the Chandel chronology* have been established beyond dispute, but many details are still unsettled, and there is much difficulty in reconciling the statements of several of the inscriptions which have been given to the public in a more or less perfect form. Maisey's† inscriptions from Kalinjar were translated a long time ago, when skill in deciphering inscriptions was a rarer accomplishment than it is now, and both the text and translation of the records published by him seem to require revision by a competent scholar.

The drying up of the Kírat Ságar at Mahoba this year has disclosed a large broken Jain statue of Sumatináth with an inscription, dated "in the victorious reign of S'ríman Madana Varmma Samvat 1215 Pús Sudi 10." (Plate XV).‡

* By a recent attempt to settle the genealogy (J. A. S. B., XLVII, Part I, p. 74) Dr. Rájendralála Mitra has added to the confusion. He reduces Samvat dates to the Christian era by subtracting 55 instead of 57 as usual, and he ignores the two new plates published at p. 80 of the same number of the Journal, and uses Sutherland's erroneous date of 1019 in the Dhanga inscription which was long ago corrected to 1056. He also omits all mention of Rájá Parmál or Paramárdi and of the other inscriptions of Madana Varmma, which show that the Dr.'s date of 1150 A. D. for the close of Madana Varmma's reign is much too early.

† J. A. S. B., XVII, Part I, 171, 313 (for 1848).

‡ General Cunningham (Arch. Rep. II. 448) mentions an image of Sumatináth at Mahoba, dated in 1213 Samvat.

The form of the figure 5 in this inscription is almost the same as that employed in the Khajuráho inscription dated 1056.

Madana Varmma evidently enjoyed a long reign, as is shown by his numerous inscriptions.

At the Guláwar Kherá in the north of Mauza Chhikahra, Pargana Mahoba, a sandstone figure of Debí, found some years ago in a well, bears the following inscription (Plate XVI) in clearly cut characters—

"Thakkura Srí Gangakena Deví Káráyitam.

"Samvat 1166."

No Rájá's name is mentioned, but the year 1166 probably fell in the reign of Prithiví Varmma.

The people believe that in its palmy days Mahoba included 52 towns or bazárs, one of them being Guláwar Kherá. The latter was certainly the site of a considerable settlement, for the marks of foundations of buildings extend for about a mile. There are the ruins here of three small granite shrines, and a fourth is said to have formerly existed.

The popular tradition about the 52 bazárs perhaps indicates that Mahoba was the chief town in a *Báoni* or pargana of 52 towns and villages.

The drought this year has also brought to light a sixth life-size sandstone elephant at the ruined temple known as Madárí, (near the standing Kakra Maṛh temple*) in the Madan Ságar at Mahoba, where General Cunningham saw only five.

We cannot accept his suggestion that these huge statues were ever "projected in mid air" from the spires, but from their size and present position it is quite plain that the alternative which he suggests is the true one, and that they were erected in pairs at each of the three entrances to the temple.

The temple of Vis'vanáth at Khajuráho has two half life-size elephants standing near it on the ground, which may formerly have been placed at the entrance. They are decidedly inferior in execution, as well as in size, to the Mahoba elephants.

Two others, still smaller, are lying in the field near the temple dedicated to Súrya, to the entrance of which they probably served as an ornament.

On the temple of Vis'vanáth several small elephants are to be seen projecting from the angles of the roof. Originally they seem to have been

* The name Kakra Maṛh is said to refer to the worship of Siva (Arch. Rep. II, 442). A ruined temple at Sálaṭ about 9 miles west of Mahoba, close to which Jain images of the 12th century A. D. have been found is also known as Kakra Maṛh.

fourteen in number, and five are still in position, supported on flat brackets, which now look weak owing to the absence of the slender stone props which supported the outer end of the brackets, of which the inner ends rest on the boldly projecting eaves of the balcony roofs. The mortice holes into which the props were inserted are still plainly visible, and in the Kandariya Mahadeo temple, the steeple of which is also adorned with small elephants, one at least of these props is in place.

The appearance of these little elephants, when the pedestal is perfect, is not inelegant.

The subject of the construction of the Khajuráho temples has hardly been touched on in the published accounts, a few words on this topic may therefore be found of interest.

In the Hamírpur District granite alone has been used for the construction of the religious edifices, sandstone being employed only for decorative purposes. At Khajuráho on the other hand almost all the temples are built entirely of sandstone, the only exclusively granite building being the so-called Chaonsat Joginí temple.

We noticed, however, that several of the sandstone temples rest on a granite foundation, which is almost concealed from view. Judging from the number of granite pillars lying about, it is probable that at one time many buildings of the coarser material existed at Khajuráho.

The *sikharas* or steeples of the larger temples are very graceful in design; that of Kandariya Mahadeo is perhaps the best, but those of the Chaturbhuj and Vis'vanáth temples are almost equal to it.

The steeples, except those over the sanctum, which seem to be solid, are so constructed as to include many spaces or chambers, the intention evidently being to lighten the weight of the mass of masonry. We could find no trace of mortar in the joints of the stones with dressed outer faces which form the casing, but it has been freely used to bind together the undressed inner stones.

Access to the roof of all the chief temples is obtained through a small square hole at the top of one of the side walls of the sanctum, which can be reached by climbing over the sculptures.

The domes at Khajuráho are of course all constructed in the usual Indian way with courses of overlapping stones. The architects seem to have felt a difficulty in spanning a considerable space with a self-supporting dome of this kind, and have accordingly in several of the great cruciform temples introduced four extra columns in the middle of the *mahámandapa* to assist in bearing the weight. This arrangement has the advantage of giving an appearance of richness to the interior, and of giving additional facilities for a display of sculpture and carving, but is disadvantageous in

depriving the building of the massive grandeur derived from the conquest of structural difficulties by bold and simple architecture.

Two only of the Khajuráho temples have self-supporting domes. One of these is the unrestored temple of Kunwar Maṭh, where the interior diameter of the dome is 14′·9″ and the other is the temple of Mritang Mahadeo,* where the architect has succeeded in spanning, without any extraneous support, a space with a diameter of 22 feet.

The fine granite temple at Makarbaí in Pargana Mahoba has a self-supporting dome 15′·3″ in diameter. With these three exceptions, we have not found any horizontal dome of more than 12 feet in diameter, built without central support.

It is somewhat remarkable that the Indian architects should not have constructed larger domes of this kind, for the horizontal dome of the celebrated 'Treasury of Atreus' at Mycenae has an internal diameter of 48 feet.†

The restorations at Khajuráho have been extensive both in the Jain and Brahmanical temples, so extensive indeed that arguments based on an examination of structural details require careful scrutiny.

The most extensive restorations of the Brahmanical temples in recent times were effected by Rájá Partáp Singh of Chhatarpur; who died in 1854 A. D. and who left directions in his will that five rupees daily should continue to be spent on the repair of the buildings, directions which have not been fully carried out.

The restorations carried out under the orders of Rájá Partáp Singh are, as a rule, judicious, and have maintained the general appearance and outlines of the buildings without attempting to add any features not included in the original design.

The steeples (*sikharas*) have been repaired with brick and mortar work, showing a smooth surface, which does not correspond with the carving of the old stone work, but, inasmuch as the outline has been carefully preserved, and the plaster has got darkened by age, the repairs are seldom offensive to the eye. In the temples of Kandariya Mahadeo, Vis'vanáth, and Chaturbhuj they are scarcely visible till sought for, but in the temple of the Sun and some others they are more clumsily executed.

Many of the carved stones belonging to the steeples have been built into walls and steps, though a little more care on the part of the masons might perhaps have found the places to which the stones originally belonged.

* See Plate XVII for a plan of this building more detailed than that given by General Cunningham.

† E. Dobson's Treatise on Masonry and Stone-cutting, page 8.

The temples usually stand, each on a massive rectangular terrace, and the greater number of loose stones found lying about have been built into the walls of these terraces.

The best preserved terraces are those belonging to the temples of Chaturbhuj and the Sun. When they were complete, a parapet, the upper portion of which sloped outwards, ran round the edge of each terrace, and inside this was attached a broad stone shelf supported on small pillars.

The main pillars of the principal temples are no doubt in their original positions, but considerable irregularities occur owing to the insertion in many places of extra pillars to support cracked cross-beams.

In the smaller temples which surround and are subsidiary to the great fanes, the pillars have been much changed about, and some have been brought in from inferior buildings.

The flights of steps leading up to the entrances of the temples have been freely restored, and little attention paid to the original design, which evidently comprised only a single narrow flight of stairs leading to the door of the main building.

On close inspection it is evident that the restorations are not all of one period, but that some are old, and in some cases the building has had time to fall to ruin again since the restoration. Examples of these early restorations may be observed in the Kunwar Maṭh and adjoining temple which were not repaired by Rájá Partáp Singh.

It is a pity that the repairs of the group of temples to which the Kunwar Maṭh belongs (Nos. 17, 18, 29, 30 and 35 in General Cunningham's plan) are not proceeded with. These buildings lie somewhat out of the way and have consequently received little notice, but they are handsome structures and superior in ornamentation to some of the western group, though not so richly decorated as the great temples dedicated to Kandariya Mahadeo, Vis'vanáth and Chaturbhuj.

The dome of Kunwar Maṭh is especially worth preserving on account of its large size.

The temple at Jatkarí dedicated to Vishṇu is remarkable from its position with reference to the cardinal points. The entrance faces the west, and the shrine the east, which arrangement is exactly the reverse of that adopted in all the other Brahmanical temples, except the smallest shrines.

The restorations of the Brahmanical temples, although considerable, are trifling compared with those of the Jain temples, which are subjected to continuous and rather undiscriminating repair and modification.

It may we fear be thought presumptuous in us to feel hesitation in adopting a conclusion respecting the age and destination of a building which has been arrived at by so experienced a scholar as General Cunning-

ham, and has been in part accepted by Mr. Fergusson, but, as regards the Ganthai temple at Khajuráho, we feel compelled to differ from these authorities.* The former is of opinion that this temple is a Buddhist building of the 6th or 7th century; the latter declares it to be most likely Jain and not Buddhist, but accepts General Cunningham's date as approximately correct. The arguments, however, adduced by General Cunningham in favour of the early age of this structure appear singularly weak. They are two, (1) that the seated 4-armed female statuette over the centre of the entrance "is most probably a figure of Dharmma, who was either the first or the second person of the Buddhist triad," and (2) that a pedestal lying near bore the well known profession of the Buddhist faith in characters of the 6th or 7th century.

Of these two reasons the first is admittedly conjectural, and the second is of little force, for the General immediately goes on to say that several naked Jain statues of a much later date, one being actually dated 1085 A. D.,† are lying among the adjacent ruins. It seems to us therefore that these facts go as far to prove that the temple is of the 11th century, as they do to prove it to belong to the 6th or 7th, and General Cunningham admits that they "would seem to show that the old Buddhist temple had been appropriated to their own use by the Jains of the eleventh century." But in reality the position of detached statues in an ancient site like Khajuráho, which has evidently been the scene of repeated vicissitudes and restorations, is worthless as a proof of the antiquity of adjoining buildings. A close examination of the remains makes it plain, as we have above remarked, that very many of the buildings have been more or less reconstructed, and a very cursory inspection shows that images and sculptures have been freely shifted about from place to place.

On the second sandstone pillar on the left of the Ganthai temple as you enter there is a short pilgrim's inscription not noticed by General Cunningham (Plate XIV). The characters in this inscription are certainly not of a very early form, and seem to be of about the eleventh century. The presence of this record of a comparatively late date, and the absence of any earlier inscription on the building itself tend to support the opinion that the temple is not so ancient as has been supposed.‡ Mr. Fergusson bases his opinion of the high antiquity of the Ganthai temple on "the character of its architectural details," but he gives no explanation of this opinion, and in the absence of such explanation a mere expression of opinion fails to carry conviction.

* Arch. Rep. II, 414 and 431.

† This is now lost, as also is the pedestal with the Buddhist inscription.

‡ Ind. Arch. 1876, p. 247.

o o

The arguments above given in favour of a possible late date for the Ganthai temple appear to us not to be undeserving of consideration, but we rely mainly on the evidence afforded by the construction of the building itself, in support of the conclusion at which we have arrived that the temple in question is a comparatively late re-arrangement of the materials of earlier buildings, some of which may possibly be as old as the whole edifice has been supposed to be. There appears to be no good evidence to show to which religion the building belonged, but, as all the immediate surroundings are Jain, it may, in the absence of proof to the contrary, be assigned to the professors of that faith.

The name of Ganthai would appear to be derived from the bells sculptured on the columns as supposed by Dr. Fergusson, and the villagers also gave this reason for the name. As stated by General Cunningham, the only portions now standing are the four pillars of the porch, the carved entrance, the four pillars of the inner maṇḍap or hall, some pilasters of granite which were built into the surrounding wall, and some portions of the roof.

The plan of the existing portion is shown on Plate XVII, and the dotted lines show the probable shape of the temple when complete.

This rectangular form we derive from the existing temple of Jinanáth and are confirmed in our supposition by the plan of the Jain temple represented in Plate XLV of Burgess, Arch. Survey of Western India, 1874.

The Ganthai must therefore have been intended to be a large temple, larger than even Jinanáth, which is the largest of the Jain temples. Assuming the building to have ever been completed and then allowed to fall into ruin, the mass of debris must have been very great, much greater than could easily have been removed, but the present remains consist of the columns and portions of the roof stated above and absolutely nothing else.

There is no trace whatever of the sanctum, which must, if it ever existed, have been very massive and crowned by a huge steeple. Nothing, except the pilasters above mentioned, remains of the thick side walls, which would necessarily have been constructed, and it is not likely that the stones of the sanctum, side walls and spire could have so completely disappeared, if they were ever there.

From this we are inclined to think that the present building is an unfinished portion of what was intended to have been a very large temple, but which was never completed, and which, as we now proceed to show, was itself a reconstruction. We are led to believe this, not only from the disappearance of the materials of the wanting portion, but also from what is now standing having been put together in a clumsy and unsystematic manner. The outer pilasters are so irregular that it is evident that they

were never intended for the positions they now occupy. They do not match with each other either in pattern or size. Some are propped up by a block placed underneath, whilst others have a piece added to the top to lengthen them. The thickness, the width and the patterns differ more or less in all. This is never the case in temples which have not been restored. The mechanical regularity with which the pillars and ornaments correspond to each other in undisturbed temples is remarkable. But in the Ganthai temple not only do the granite pilasters not match, but even the eight sandstone columns are irregular.* There are four pairs of them, and the decoration of each of these pairs has certain minute peculiarities, though the general style of all is the same. The accompanying Plate XVIII will illustrate our meaning, the several pairs of corresponding pillars being A and B, C and D, E and F, and G and H ; and the reader will observe that some of the pillars which match each other are in unsymmetrical positions. That the restoring of old temples, and in many cases the absolute construction of new temples out of old materials, is constantly going on at Khajuráho is seen from the group of Jain temples east of Ganthai, where the work of building and repairing is so continual, that, with three exceptions, *viz.*, Jinanáth, Parswanáth and the shrine of the Colossus of Ádináth, it is difficult to say of any building that it is now as it originally stood.

Some undescribed buildings in the Hamírpur District appear sufficiently remarkable to deserve description, and we close this paper with a brief notice of one group of them. For the plans of these temples, see Plate XIX. The three temples now described are of small size, but, judging from their shape, are doubtless Jain. They are situated (1) at Barsí Taláo, near the village of Pahra, 14 miles north-east of the tahsílí town of Mahoba; (2) at Makarbaí, 9 miles distant in the same direction ; and (3) at Bamhaurí, 4 miles south-east of Makarbaí. This last village Bamhaurí is not now in the Hamírpur District, having been ceded to the native state of Charkari after the mutiny.

In these temples the shape is a rectangle, the sides of which face the cardinal points of the compass, with a sanctum in the middle of the western side, opposite to which is the entrance porch.

The roof, which is low, is supported internally on eight short pillars very simply ornamented, and surmounted by plain capitals over which are placed the stone beams which support a perfectly unornamented ceiling. Over the sanctum was a *sikhara* or steeple, which at Bamhaurí is still stand-

* The accounts of General Cunningham and Mr. Fergusson seem to us to exaggerate the beauty of these pillars, and indeed to attach to this Ganthai temple much more importance than it deserves.

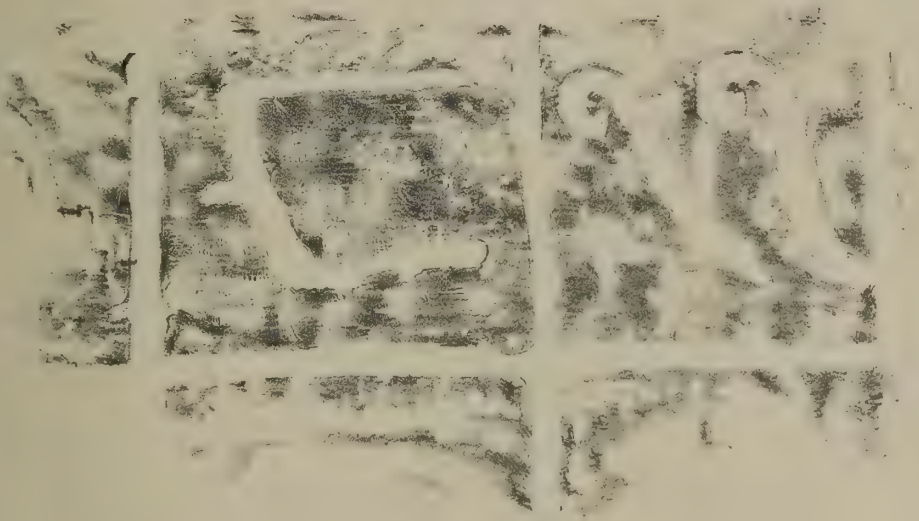
ing, slightly ruined, but which is wanting both in the temple at Barsí and at Makarbaí.

In this last one the entrance to the sanctum has been walled up, so that the shrine is not visible. The floors of the shrines at Barsí and Bamhaurí are both somewhat below the level of the floor of the main chamber.

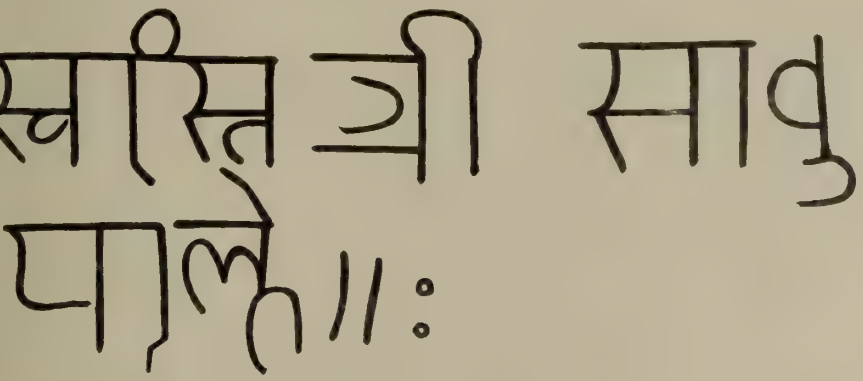
The material of these three temples is granite, the walls being constructed of wide slabs set on edge, and externally two bands of ornamented moulding run round the building.

From some fragments of stucco adhering to the outside of the Barsí temple it would appear to have been covered with plaster. This temple differs somewhat from the other two in having two openings for light in the middle of the shorter sides of the maṇḍapa or hall, whilst the temples at Makarbaí and Bamhaurí have closed sides and only obtain light from the front of the building. We were unable to find any inscription at any of these temples, and the villagers only know them by the name of Baiṭhaks. The name of the *taláo* on the edge of which the first temple stands is Barsí, and an ancient village site to the west is also called Barsí. The maker of the lake is said to be Bár Brahm Chandel.* To the east of the temple stands a small shrine which we have not described, it being of no special interest. The neighbouring village of Pahra is also known under the name of Khajuráha. In another paper we hope to describe some other buildings which have hitherto either altogether escaped notice or been inadequately described. While we were engaged on this paper, Vol. VII of the Archæological Reports has appeared, but the notes recorded in it, are so meagre, and in some details so incorrect, that much remains to be done before it can be said that the antiquities of Bundelkhand have received adequate treatment.

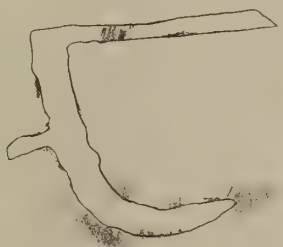
* Bár Brahm (*i. e.* Varmma) is not mentioned in any known inscription, but is included in the bards' lists of the Chandel princes. He was probably not a ruling chief, but one of the members of the ruling family.



Figures 8 and 11 in Magic Square, Jinanath Temple



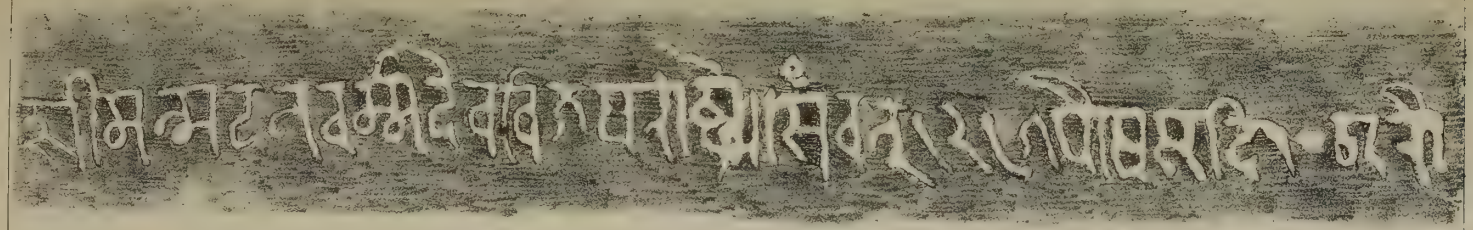
Pilgrim's Inscription, Ganthai Temple, size ½ of orig.



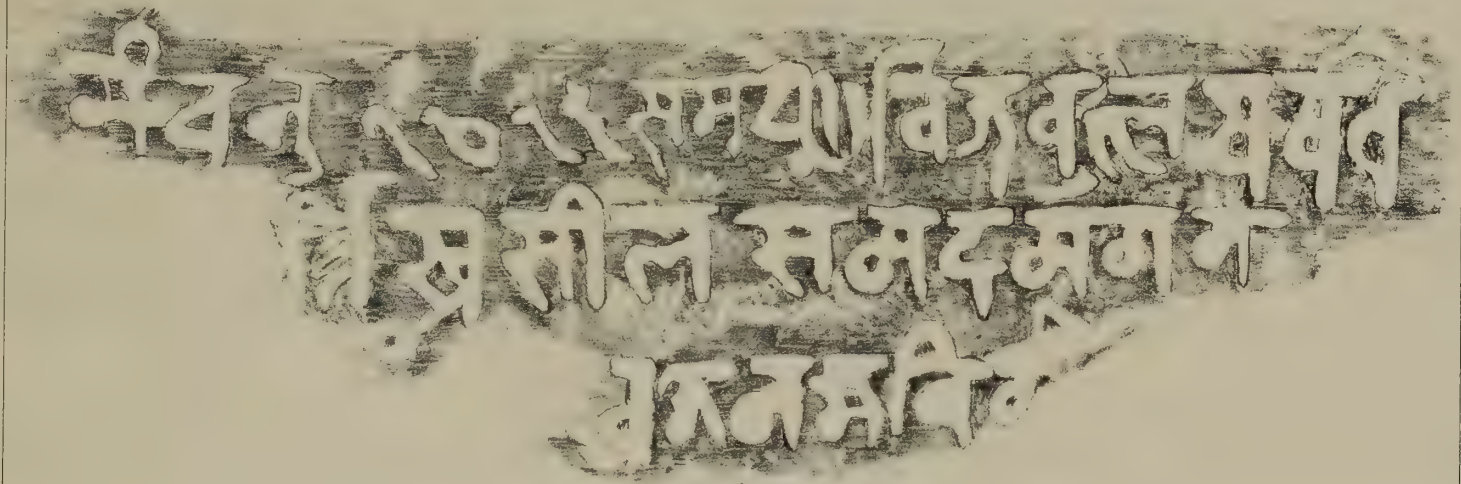
Tracing of Rubbing of Figure 8 in Magic Square

V. A. Smith del. Lith: & Printed by W Newman & Co Calcutta

INSCRIPTIONS FROM KHAJURÁHO



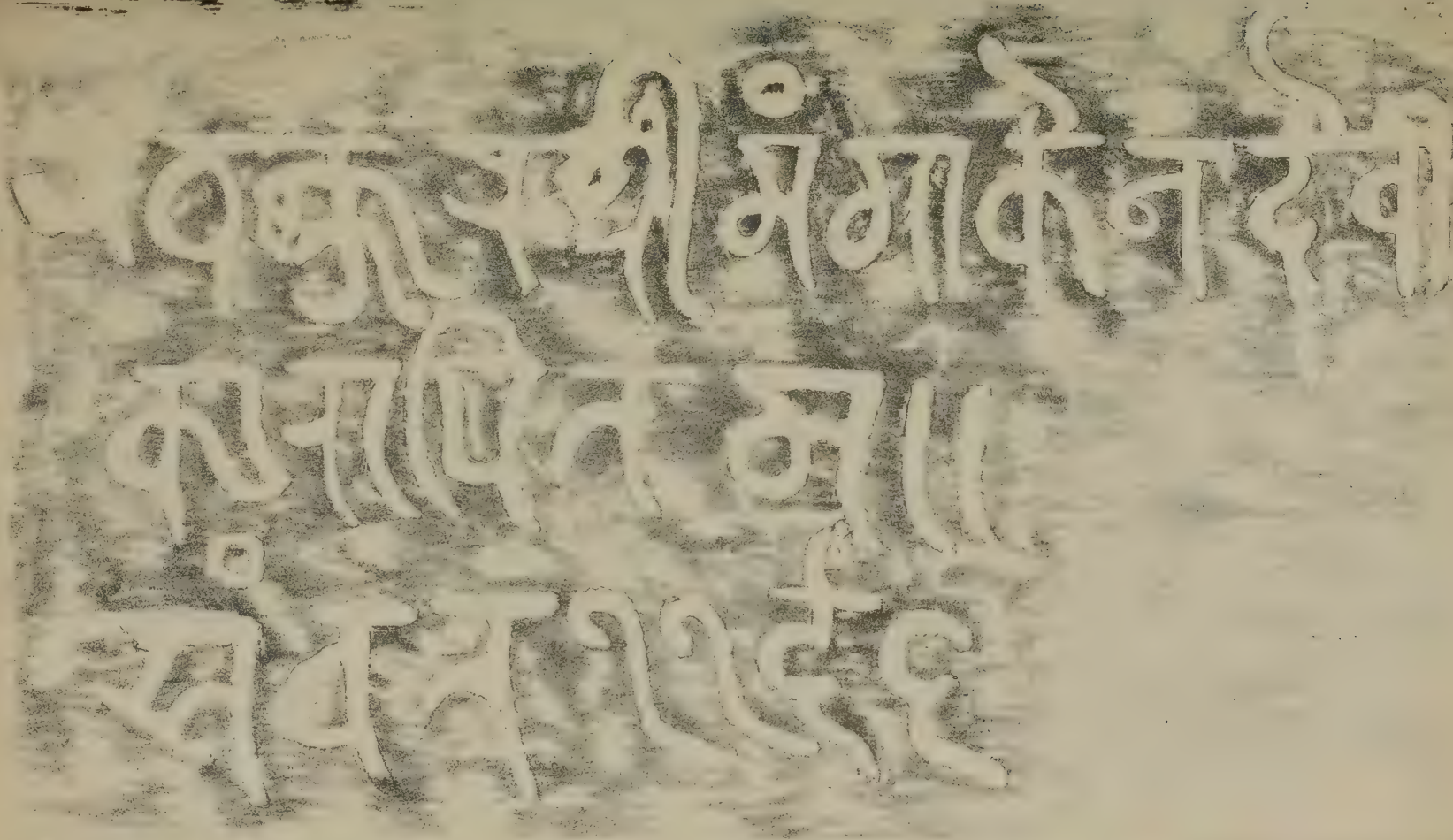
Beginning of Inscription on base of a broken Jain image, showing date 1215.



Rubbing of date 1011 in Inscription of eleven lines, in Jinanath Temple.

V. A. Smith del. Lith. & Printed by W Newman & Co Calcutta.

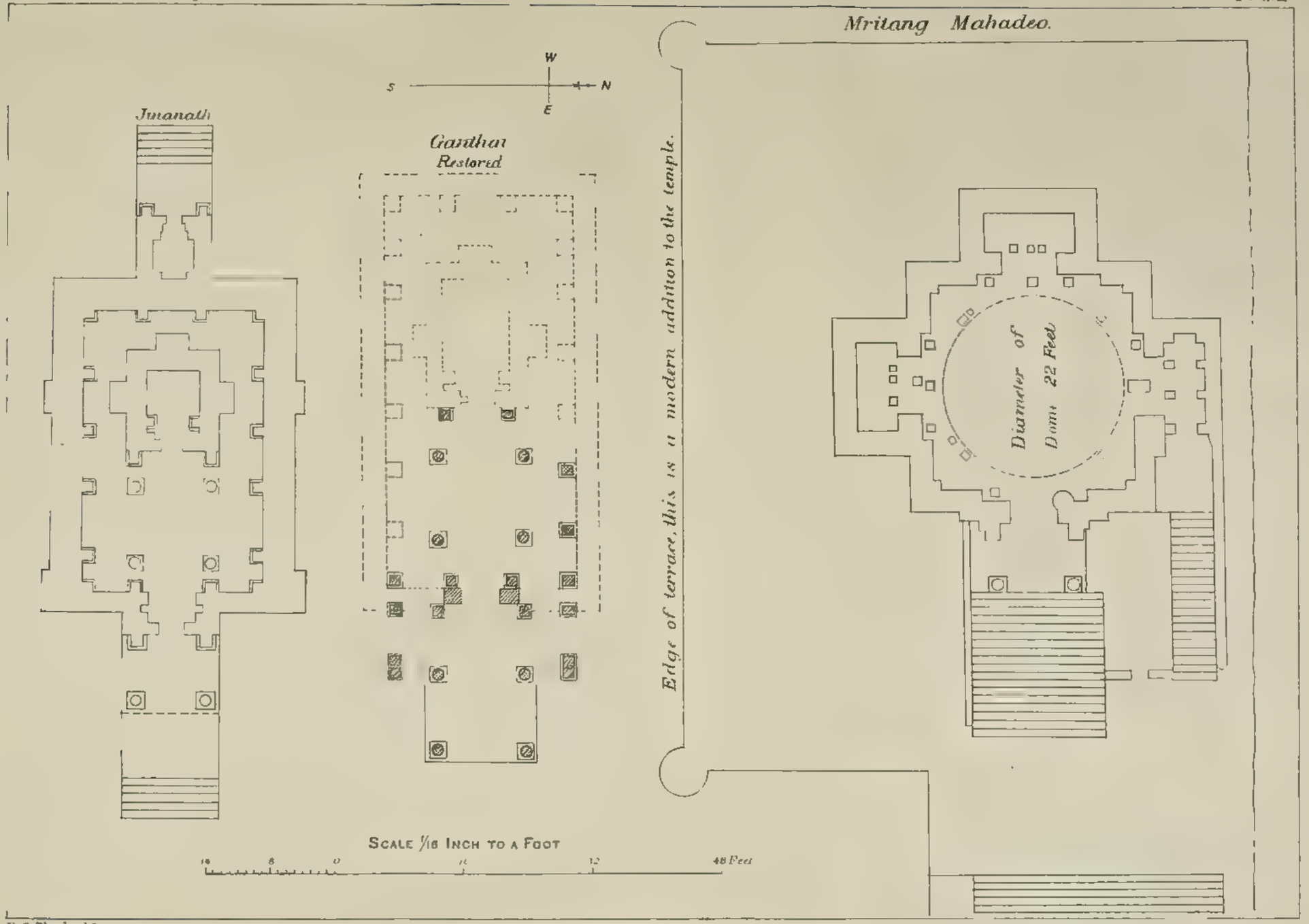
INSCRIPTIONS FROM KHAJURÁHO.



V. A. Smith del.

Litho. & Printed by W. Newman & Co. Calcutta

RUBBING OF INSCRIPTION ON A FIGURE OF DEBI AT GULAWOR KHERA

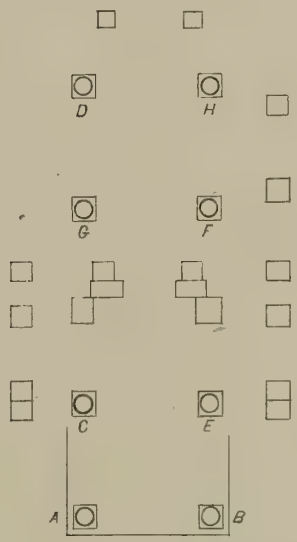


F C Black, del.

PLAN OF TEMPLES IN KHAJURAHO.



Ganthai.



Note

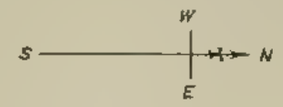
The letters A B
C D
E F
G H
refer to the similarity in design of pillars.

SCALE 1/16 INCH TO A FOOT

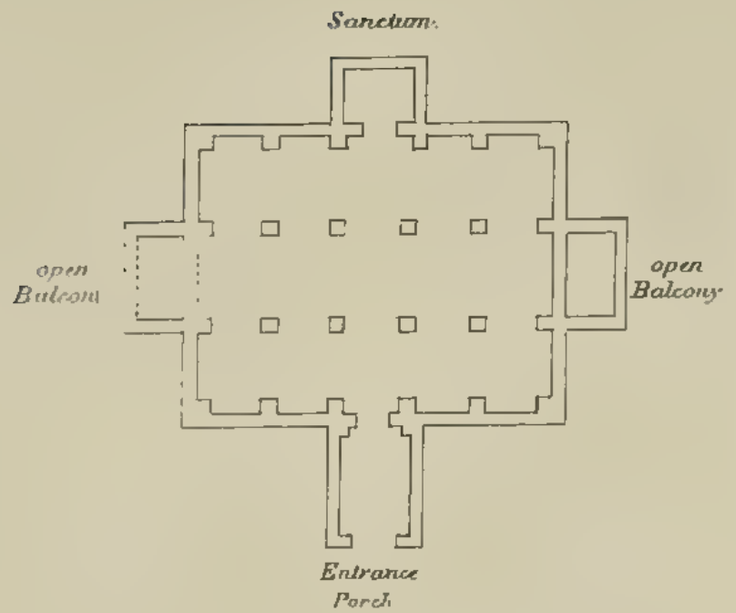
16 8 0 32 48 Feet.

F.C Black, del.

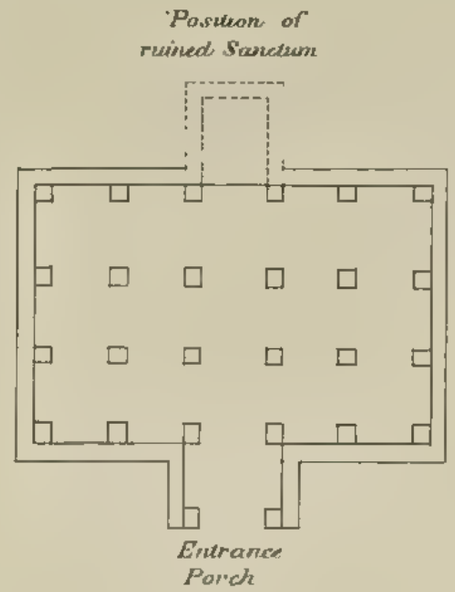
PLAN OF TEMPLES IN KHAJURAHO.



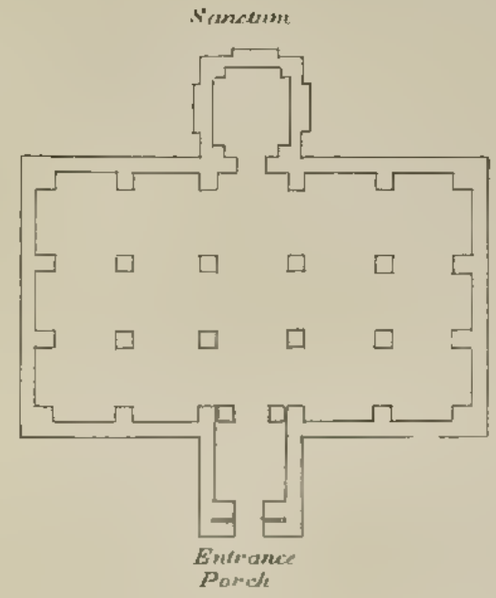
Barsi.



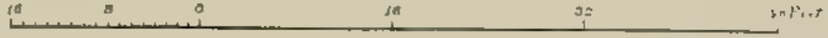
Makarbei.



Bamhauri



SCALE 1/8 INCH TO A FOOT



F. Blagk del

PLAN OF TEMPLES IN KHAJURAHO

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Page 273, line 10, *for* 'darjáh' *read* 'dargáh.'
„ 273, „ 13, *for* 'Bíjay' *read* 'Bijay.'
„ 273, „ 13, *for* 'Dasaráth' *read* 'Dasarath.'
„ 273, „ 33, *for* 'name' *read* 'namo.'
„ 275, „ 1, and 5, *for* 'Indrapúrá' *read* 'Indrapura.'
„ 275, „ 10, and 15, *for* 'Hastinápúr' *read* 'Hastinápur.'
„ 275, „ 13, *for* 'Sárdhana' *read* 'Sardhana.'

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Part II.—PHYSICAL SCIENCE.

No. I.—1879.

I.—*On new species of the Genus* Plectopylis *of the Family* Helicidæ.—*By* Lieut.-Colonel Godwin-Austen, F. R. G. S., F. Z. S., &c., *late Deputy Superintendent Topographical Survey of India.*

(Received October 7th, 1878;—Read March 5th, 1879.)

(With Plate I.)

Since the paper on the shells of this group of *Helices* was published in the Proceedings of the Zoological Society of London, Nov. 17th, 1874, I have had the good fortune to obtain three new species, one from Tenasserim, among a collection of shells made by Mr. O. Limborg, of which a list is being prepared; the other two are from Eastern Assam. I give a plate, drawn with the aid of the *camera lucida*, shewing enlarged the arrangement of the internal *plicæ*, which differ materially from all those I have as yet examined and figured; these differences form the best of characters by which the species may be determined. Some conchologists may be inclined to doubt the persistence of these internal characters; personal observation is, however, the best means of settling such a point. Having a very large number of *P. brachydiscus*, described below, I set to work and broke open 42 specimens without finding the very slightest variation; of *P. brahma* thirteen were examined with the same result; there is some slight variation in the young, but only in so far that the barriers shew an undeveloped state, the general arrangement being the same. In *P. achatina*, I found perfect similarity in some 12 specimens, and the result has been similar in all other species that I have examined. I think we may therefore feel certain that such internal structures, depending as they do on the form of the

animal, its mantle and secreting organs, will be as persistent as the shell itself, and that their form and relative positions being more complicated and more pronounced than mere outward shape, any divergence in the former is of importance and more noticeable and noteworthy in a specific sense. The animal, I am sorry to say, I have never had an opportunity of examining very closely.

P. shanensis, Stoliczka, (J. A. S. B., 1873, p. 170,) overlooked in my first paper, is I find, the same as *P. trilamellaris*, which I described in the P. Z. S., Jany. 1874, from Burmah; so this last title will not stand. Ferd. Stoliczka's fine collection of shells passed to the Indian Museum, and Mr. G. Nevill compared the two shells and settled their identity. It should be placed after No. 12, *perarcta*.

Helix ***(Plectopylis)*** **brachydiscus**, n. sp. Plate I, fig. 1.

Shell dextral, umbilicus very open and shallow, very discoid, rather strong, dull umber-brown, epidermis thick with a cloth-like texture, finely and beautifully ribbed longitudinally; in young fresh shells the upper outer margin is closely set with a strong regular epidermal fringe about ·075 inches long. Spire quite flat, approaching the concave in some specimens, the apex itself having a subpapillate form. Whorls 7, the last rather flat on the side and angular above, descending at the aperture, which is very oblique and oblate. Peristome strongly reflected, thickened, white, the margins connected by a well raised ridge, notched above and below. A long horizontal lamella is given off from the upper middle portion of this towards the vertical parietal lamina, but only extends for 0·20 inches, then terminates, but at ·15 inches is again developed, becoming thicker and higher as it approaches the vertical lamina and ending just short of it, in this respect being similar to *P. perarcta*.

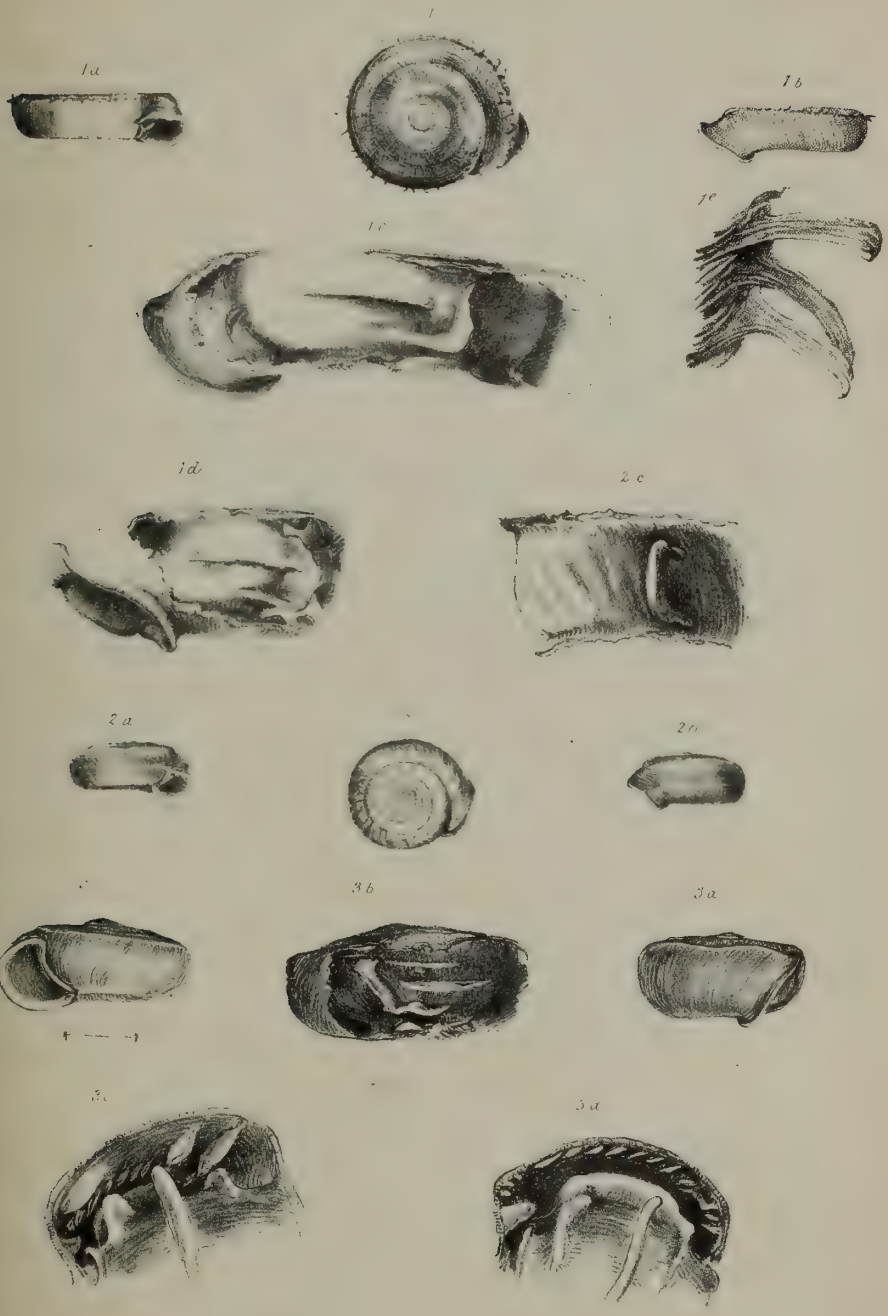
The parietal vertical lamina is pointed above and gives off from the lower basal end a short lamella towards the aperture, and a very slight short thin, free lamina is to be seen just below the vertical barriers. Palatal teeth simple, six, the 2nd, 3rd, 4th and 5th, are the best developed, the 1st and last are small, 2nd the longest.

Animal not observed.

The measurements of the specimen drawn and of the largest specimen are respectively—

Major diam. 0·82. Minor diam. 0·68. Alt. at axis about 0·24 and
„ „ 0·95. „ „ 0·83. „ „ „ 0·28.

Hab.—This shell was found by Mr. O. Limborg on the high range of Mulé-it, east of Moulmein, Tenasserim, and in the neighbourhood. He collected an immense number in a dead bleached state, but only a dozen in a fresh state; the others were, however, exceedingly valuable for proving, as above shewn, the persistency of the internal structure in all.



H. Godwin-Austen del et lith.

Machure & Macdonald Imp

NEW SPECIES OF PLECTOPYLIS.
TENASSERIM AND ASSAM.

This form should be placed between No. 11, *P. pseudophis*, and No. 12, *perarcta* in my key to the species, *vide* P. Z. S., 1874, pp. 612, 613.

Helix (*Plectopylis*) **Oglei,** n. sp., Plate I, fig. 2.

Shell dextral, widely umbilicated, sub-discoid, dull pale brown with close-set sienna markings crossing the whorls. Epidermis thick and nacreous, and somewhat rough. Apex flat but slightly concave, the whorls rising regularly. Whorls 8, the last descends slightly near the aperture, which is very oblique and ovate. Peristome slightly reflected, white, continuous on the body whorl, but not strongly developed. Palatal teeth 6, 3rd, 4th and 5th equal, 6th longer, double. On the parietal side is one single vertical lamina with buttress-like supports on posterior side above and below.

Major diameter 0·65 ; minor diam. 0·58 ; alt. axis 0·25 inches.

Hab.—The above shell was discovered near Sadiya, Assam, by Mr. M. T. Ogle of the Topographical Survey, after whom I have much pleasure in naming it. Mr. Ogle collected and sent me a very fine collection of land-shells from this eastern part of the Assam valley, comprising many new and interesting species, which I am engaged in working out. The nearest species to *P. oglei* is *serica* of the Burrail Range, but the former is very much larger and may be known at once by its less flattened form and darker rougher surface. In the synoptical table of this sub-genus, P. Z. S., 1874, p. 612, this shell should follow No. 1, *P. serica*, G.-A.

Helix (*Plectopylis*) **brahma,** n. sp., Plate I, fig. 3.

Shell sinistral, rather closely umbilicated, discoidal, pale ochry-brown, finely and regularly striate. Apex flat yet slightly convex. Whorls 7, last angular above and rounded below, slightly compressed behind the aperture and hardly descending. Aperture lunate, oblique. Peristome slightly reflected and thickened, white, continued as a callus on the body whorl.

Internal structure complicated ; the parietal vertical lamina is strong and gives off a short horizontal lamella at the lower end ; above this are two other and parallel *free* lamellæ,* both short, the lower being the best developed ; the upper is occasionally united to the upper end of the vertical barrier. There is a very thin thread-like lower free lamella extending to the peristome and uniting with the parietal callus. The palatal *plicæ* are arranged in two rows, those of the anterior row are few and large, four in

* In three cases out of twelve I examined, the upper *lamella* was united to the vertical barrier, but this does not affect the order of position and arrangement of all these processes in this species.

number, the two upper long, narrow and adjacent, the 3rd is a flattened dome-like mass, the 4th is long and curving inwards. Behind this at a short distance is the second row, consisting of fourteen very minute, closely arranged, thin, longer or shorter tooth-like processes, those on the upper side being slightly the largest.

Major diam. 0·35 ; minor diam. 0·32 ; alt. axis 0·2 inches.

Hab.—This very interesting new form was also obtained by Mr. Ogle near Brahmakhund, eastern Assam, at 1,000 feet elevation.

The arrangement of the internal barriers is unlike any species of this sub-genus I have yet examined, and shews a decided departure from the usual North-East Frontier forms, a sort of foreshadow that in the mountains further east this particular development is to be found of a like or more marked character.

In external form the present species resembles *P. shiroiensis*, but may be distinguished from it by the coarser epidermis and more regular striation, and the broader wider size of the last whorl near the aperture, shewing no constriction. It is of interest to note that the flattened dome-like barrier on the palatal or mantle side coincides with the vertical barrier in *P. shiroiensis* where we see the distinct result of two teeth fused as it were together.

This species should come in after No. 18, *P. refuga*, var. *dextrorsa*, as a sub-section *b'* of group B of the key in P. Z. S. Palatal vertical *plicæ* only compound, in two rows, numerous. Horizontal parietal *laminæ* short.

II.—*On the Operations for obtaining the Discharges of the large Rivers in Upper Assam, during Season* 1877-78.—*By* Lieut. H. J. Harman, R. E., *in charge Assam Valley Series, Survey of India. Communicated by* Major-Genl. J. T. Walker, R. E., C. B., F. R. S., *Surveyor General of India.*

[One of the Survey Operations during the field season of 1877-78 was to explore as much as possible of the region between the Subansiri and the Dihang Rivers, with a view to ascertaining which of these two affluents of the Brahmaputra river had the best claim to be considered the recipient of the Sanpo River of Thibet. As there was reason to fear that political difficulties might intervene to prevent the survey officers from proceeding a sufficient distance into the interior to settle this disputed point, Lieut. Harman was directed to measure the discharges of the several rivers at various points, and to ascertain the volume of water in each river in order that additional evidence might be forthcoming on an interesting geographical problem. The following paper gives the details of these operations.

J. T. W.]

The first river measured was the Subansiri. The method of procedure was as follows, and the same method of work was adopted for all the other rivers :

A gauge-post was planted in the bed of the stream to note the variation in level of the water during the operations. Four parallel lines were laid out across the river, at a perpendicular distance apart of 758 ft., the shore portions of the lines being marked by flags (vide fig. 1).

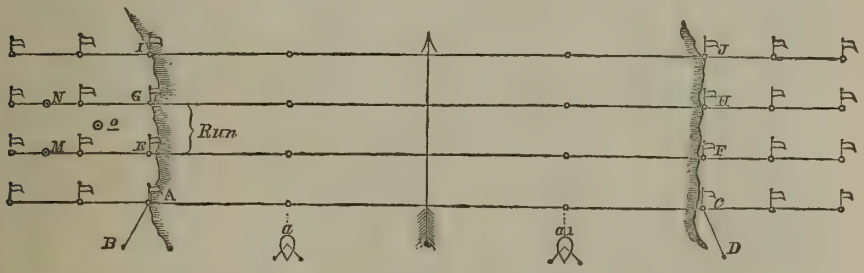


Fig. 1.

Base lines A B and C D were measured, and on a plane table a chart was made on the scale of 70 feet = 1 inch showing the lines of flags and the margins of the river. The section was obtained in the following manner :

A small dug-out (canoe) was anchored at (a) and the cable eased off until the observer (myself) in the boat was exactly on the upper or first line A C. A signal was made to an assistant stationed with the plane table at B or D, who at once cut in the position of the observer in the boat on the line A C. Soundings were then taken, and the boat let down to the 2nd line or upper line of the "Run." The position of the observer in the boat was again cut in and soundings were taken ; and so on for the remaining two lines. The boat was then hauled up, the grapnel raised, and a new position (a_1) taken up.

It was found that in most cases, the line joining the four sounding stations obtained from one anchoring position, closely agreed in direction with the surface flow of the water at that part of the river.

The instruments for measuring velocities were discs of wood 3 in. diameter and $\frac{1}{4}$ in. thick, marked by a little mass of cotton wool thrown over a peg standing upright in the centre of the disc (fig. 2). Also tin tubes, 1 in. diameter, closed at one end, varying in length from $2\frac{1}{2}$ to 10 ft., containing enough water to sink the tubes, so that only 3 or 4 inches



Disc.

Fig. 2.

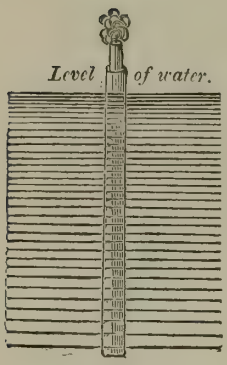


Fig. 3.

of them remained above water (fig. 3). In the mouth of the tube was a cork and some cotton wool for a marker. I obtained from Calcutta a number of hollow balls 3 in. diameter, for sub-surface velocity measurements: I did not get them till February and found that unfortunately they were defective and were of little use to me.

I had also a current-meter by "Casella," with which I intended observing sub-surface velocities. Capt. Willans, R. E., Executive Engineer, Shillong, very kindly designed and had made up for me an effective apparatus, a lift by which the current meter could be lowered and fixed to any desired depth in the water, could be started and stopped at pleasure, and raised easily to allow of the record being read off. Unfortunately, when too late, I found that the meter would not work except with a very high velocity of water, and those records obtained were untrustworthy.

The method of measuring the velocity was as follows:—

The boat was moored on the upper line A C (vide Fig. 1), and the floating instruments dropped into the water. The general line of direction taken by the floats was observed with a prismatic compass; on the bank were two observers M and N, each furnished with a good pair of binoculars. A recorder, with a large chronometer (Dent's) beating half seconds, was seated at *O*.

The flag staves were thin and straight. When the observer M saw a float cross his line E F he cried "*past*," and the recorder at *O* noted the time in his book: when the float passed the line G H, the observer *N* cried "past" and the recorder noted the time. The interval between the two noted times, gives the time taken by the float to pass over the "Run."

The following example shows the method of computation adopted in the majority of cases: of course it sometimes happened that the section of the bed of the river between adjacent sections where velocities were taken was as in fig. 4, or the direction of the flow of the water at *a* differed greatly from that at *b*, or the observations at one of the Sections were untrustworthy; in such cases modifications were necessary and methods recommended by one's judgment were resorted to; but the following example gives the type of computation adopted in most cases:—

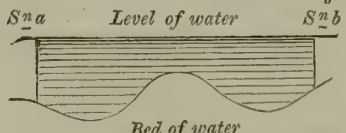


Fig. 4.

The length of run = 50 feet.

From chart the length $c\ e = 200$ feet (vide Fig. 5). Make $c\ G = G e$.

Through G draw G K, showing a mean direction of flow of floats, *i. e.* 265°.

Draw $f\ G\ h$ perpendicular to G K and the lines cf, eh perpendicular to $f\ g\ h$.

Then for computation of discharge ; the area of the section from c to e is very nearly $\left[200 \times \text{Cos } 9° \times \left(\frac{12 + 10}{2}\right)\right] = \text{A}$.

From the velocity measurements—

The meantime of passage of 10 discs thrown in at $c = 12{\cdot}5$
6 tubes, each 10 ft. long, at $c = 14{\cdot}5$
4 „ „ 3 ft. long, at $c = 12{\cdot}0$
..... of 12 discs thrown in at $e = 12{\cdot}0$
4 tubes, each 8 ft. long, at $e = 14{\cdot}5$
3 „ „ 3 „ at $e = 12{\cdot}0$

Assumed meantime of passage for section is 13·5—

The mean velocity per second required for section is $\frac{50 \times \text{sec. } 9°}{13{\cdot}5} = \text{V}$,

and AV = discharge, or number of cubic feet of water passing through c to e in one second of time.

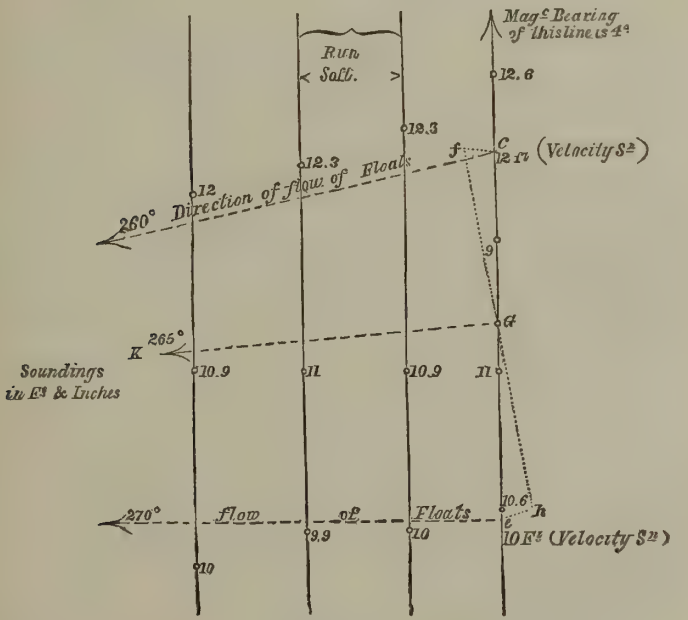


Fig. 5.

There is a clumsiness in the formula, but no alteration has been made, because I set up all the quantities for giving the discharges before it was noticed. The values of the discharges are not affected, but I may as well note how the formula took its shape.

Let M N O P (Fig. 6) be an open channel of considerable length, the flow of water uniform, the section of the channel rectangular.

Let *cd* and *ef* be two lines parallel to each other, at a perpendicular distance apart equal to *gh*. *ab* is a section at right angles to length of tube and to the direction of flow of water.

Let the angle $cgi = 90° + \theta$, and v be the depth.

Let t be the time in seconds taken by a particle of water to move from g to K.

Then the Discharge through the section $cd = \frac{cd \times v \times gh}{t}$.

The Discharge through $ab = cd \times \cos\theta \times v \times \frac{gh \sec.\ \theta}{t}$ (1) $= \frac{cd \times v \times gh}{t}$

It is this formula (1) which has been employed.

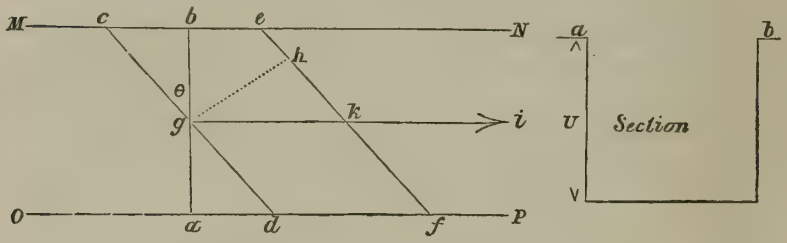


Fig. 6.

(*a*) The line of maximum velocity of a river is found at a short distance below the surface. The velocity at the bottom of a river is less than the surface velocity; the retardation is great if there are many weeds.

The bottoms of all the rivers measured were of coarse heavy sand, excepting a short stretch of big pebbles in the bed of the combined Dihang and Dibang rivers.

Professor Rankine assumes that the mean velocity on a vertical line, is to the greatest velocity on the same line, as 3 to 4 for slow rivers and 4 to 5 in rapid streams.

The velocity of a rod extending to nearly the bed of the stream is approximately the mean velocity of the water in the vertical plane traversed by the rod. In assigning a mean velocity for computation to the several portions of the sections of the rivers, all the above facts were kept in view.

At some sections of observation for determining velocity, many different instruments were used and many passages made; at other sections only a few observations were made.

(*b*) The arithmetical mean of the times noted at a station of the passages of a certain floating instrument, was taken as the mean time of passage of that instrument. The record of times was kept to half seconds, and it is rarely that discrepancies of over 1 second from the mean occur. These discrepancies were due, first to errors of observation and 2ndly to considerable divergence of the floating instrument from the general line taken. Having obtained at a station the mean time of passage of each kind of instrument, and having regard to the number and quality of the observations, a value was assumed as representing the mean time of passage of the water at that station.

For the adjacent station, a mean time of passage was obtained in a similar manner. Then for the whole included section, a value was assumed as representing the mean time of passage, and this value was employed in the computation.

In such a case as the following: at station (*a*) the velocity of the water is high, and the swift water extends nearly to the adjacent station *c*, and shows a well defined margin-line of the current. At station *c* the velocity is low.

In such cases the section from station (*a*) to station (*c*) is sub-divided into 2 parts; the swift water portion is dealt with by itself, the remaining part by itself.

The method adopted of obtaining the data for computation gives, I think, the results required, and without much labour.

(*c*) The Flood Discharges are merely probable values. They were obtained in the following way. The section lines were laid down on the Revenue Survey large-scale maps of the rivers. An examination was made on the ground to see what changes had taken place since the maps were made. All vertical heights on these flood sections (shown on charts of river sections) were estimated. The flood section was then divided into portions, and an assumed velocity was assigned to each portion, the value being chiefly determined by the section of the portion, its position, and from what local information I could gather. The main-stream high flood velocity has been taken at 7 feet per second. To obtain the total Flood Discharge it was necessary to increase the velocities of each portion of the dry season section. After once assuming values for the flood velocities of the different portions, no alterations were made subsequently.

(*d*) Some of the rivers measured, were above the mean low-level of the dry season. To obtain the discharge of the river at its mean low-level of the dry season, the following method was adopted: the area of each portion of the section, due to rise, was computed and subtracted from the observed area of that portion; then, to the diminished area of the portion, a mean velocity was given which was less than the observed mean velocity

of the portion. After velocities have been once assumed they have not been reconsidered or altered.

In the case of the reduction of the observed discharge of the Dibang river, to its mean low-level discharge of the dry season, the rise of water was taken as 4 feet, but subsequently it was taken as 5 feet.

The depths along the section of the Brahmaputra above Sadiya were all obtained on the same day. The velocity observations at some of the stations were made when the river had risen 1 foot to 1½ feet: reductions were therefore made to the observed velocities at these stations.

(*e*) The columns in the Synopsis Table, headed "Mean Velocity of river at its mean low-level of the year," and at "high flood level," do not contain much information unless they are compared with the sectional areas, and form of section.

The sum of the discharges of the rivers forming the Brahmaputra river should equal the discharge of the Brahmaputra itself. The work done fulfils this test sufficiently nearly to allow, I think, of the stated discharges being considered as sufficiently approximate for geographical purposes.

The Subansiri measurements were made between the 25th and 28th of February 1878. The weather was fine for the work, the level of water constant; very little wind disturbed the observations. The boatmen and others living at the site of the section stated that the water was very rarely seen at a lower level, and that during the observations it was at the dead-low of the dry season.

Ninety soundings were made to obtain the section of the stream; at 21 stations observations were taken for velocity and there were 510 recorded passages of the floating instruments. The resulting discharge at lowest level of the year was found to be 16,945 cubic feet per second: the superficial area of the section 9,637 superficial feet, so that the mean velocity of the water was 1·7 feet per second.

During the very high floods of the year the water is known to rise 22 feet, but calculations have been made for ordinary high flood, taken at 16 feet; with this rise of water I have computed the discharge to be at least 170,000 cubit feet per second; area of section is 35,700 superficial feet, so that mean flood velocity is 4·7 feet per second.

For extreme floods, 13,000 superficial feet must be added to the section area and 70,000 cubic feet to the discharge, which would bring the maximum discharge up to 240,000 cubic feet per second, and sectional area to 48,700 superficial feet.

The site of the section was at Pathalipam village, 3 miles west of Gogah-muk ferry, and about 10 miles from the foot of the hills, from the gorge where the river issues out into the plains.

Before issuing into the plains, the river flows gently for 9 miles in a

great chasm; the depth of the water may be taken at 60 feet, (the few soundings taken were 66 to 70), mean width 90 yards, and velocity fully 1 foot per second. Such dimensions give a discharge equal to the measured discharge; but I am of opinion that had I selected my site at the place where the river leaves the hills, I should have obtained a greater discharge than the one I measured, on account of loss by percolation through the sand.

The Subansiri after leaving the hills spreads out into several sandy channels, which unite above Gogah-muk. At Gogah-muk the river flows in one channel and turns abruptly from a north to south course into a west by north course.

The next river measured was the Brahmaputra river, at a site due north of, and 3 miles distant from Dibrugarh Church. There was a rise in the river just before the measurements were made, but the work was done at the low level of the year, and the observations were made at favorable times. On account of the wind and the rapidity of the current, the work occupied me from March 11th to 18th. In the rapid parts of the river, where the velocity was 5 feet per second, a light canoe manned by four men could not make way up-stream, and it was therefore generally necessary to have the boat brought in shore, poled up-stream and then dropped down into position: a position once missed could only be regained by going in shore again.

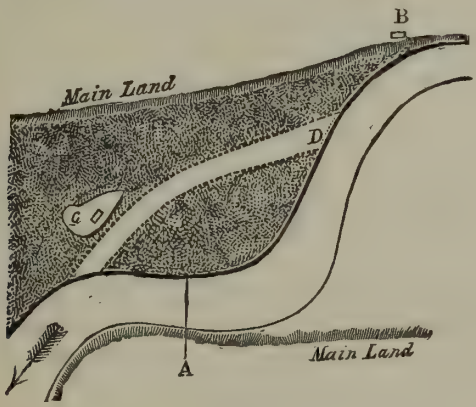


Fig. 7.

The site selected, though favourable for the operations, unfortunately did not include the entire volume of the river: the blunder happened in this way:

Between the site *A*, (Fig. 7) and the Miri village of Saenga Jan (B) is a distance of 3 miles. During the cold season of 1876-77 there was a wide channel D in the sands, its mouth was choked with sand; a little way down the channel the water was less than knee-deep and the flow very slight.

Before commencing work I sent men to see the channel and they reported it shallower than it was in the preceding year: just before closing work I found that at the village *C* the channel was wide, breast deep and the flow slow. To allow for this unmeasured percolation through the sands I have added to the measured discharge of the Brahmaputra 3000 cubic feet per second to bring the result nearer the truth. The "Buri Suti" channel for two miles from its mouth has no water in it, but at 15 miles from its mouth it is rarely fordable.

After the work was finished on March 19th there was a rise of 6 feet in the river, and at Gauháti on March 24th it caused the gauge register to read 4.6 ft. above the zero.

For the section, 120 soundings were taken: observations for velocity were made at 14 stations, and there were 255 recorded passages of the floating instruments.

The resulting discharge at the low level of the year was found to be 113,115 cubic feet per second; the superficial area of section was 24,477 superficial feet, so that the mean velocity of the water was 4.6 feet per second. To the observed discharge, 3,000 cubic feet must be added for percolation through the sands and flow through the channel D, mentioned above, thus bringing the discharge up to 116,115 cubic feet per second.

During very high floods the water rises 20 feet, but calculations have been made for an ordinary high flood rise of 16 feet, which gives a discharge exceeding 830,000 cubic feet per second, a sectional area of 164,000 superficial feet, so that the mean velocity of the flood is 5 feet per second.

For an extreme flood the discharge would exceed 1,100,000 cubic feet per second, and the sectional area 208,000 superficial feet. For a rise of 3 feet over the low level of the year, the increased section would be 14,100 superficial feet and the increased discharge 54,000 cubic feet per second.

The next river measured was the united stream of the Dihang and Dibang rivers, at one mile above the junction with the Brahmaputra and one mile below the mouth of the Dibang river. At the time of measurement the river was somewhat less than 3 feet above the low level of the year.

The weather was fairly favourable and the site selected was a good one. The work was done between March 24th and 27th of 1878.

For the section, 59 soundings were taken, observations for velocity were made at 12 stations, and there were 170 recorded passages of floating instruments.

The resulting discharge was 110,011 cubic feet per second, sectional area 25,105 superficial feet, so that the mean velocity was 4·4 feet per second.

The river at time of measurement was 3 feet above the minimum level of the year. The increased section due to this 3 feet rise, is computed to be 6,222 superficial feet, and the increased discharge to be 27,359 cubic feet per second ; thus the cold weather low-level discharge of the united streams is 82,652 cubic feet, sectional area 18,883 superficial feet, mean velocity 4·3 feet per second.

To obtain the cold weather low level discharge of the Dihang river it is necessary to subtract the Dibang discharge, shown below to be 27,200 cubic feet per second, and this quantity subtracted from the discharge of the united streams will give the Dihang discharge to be 55,400 cubic feet per second at minimum level of the year.

During very high floods the united rivers rise 20 feet, but the calculations have been made for an ordinary high flood rise of 15 feet which gives a discharge of 485,000 cubic feet per second, a sectional area of 84,000 superficial feet and consequent mean velocity of 5·7 feet per second.

To obtain the flood discharge of the Dihang river, it will be necessary to subtract that of the Dibang river which is shown below to be 122,483 cubit feet per second, which amount subtracted from the above 485,000 cubic feet leaves for the ordinary flood discharge of the Dihang river 362,517 cubic feet per second.

The next river measured was the Dibang river at one mile above its mouth and half a mile below the mouth of the Senseri river.

The work was done on the 27th March 1878 when the river was 5 feet above the low level of the year. This river receives a good deal of snow-water, from snowy mountains close to the plains. After a hot day the river will rise during the night 2 to 3 feet, subsiding during the morning. This is not the case in the Dihang river.

There were 37 soundings taken for the section. At 9 stations observations were made for velocity, and there were 116 recorded passages of floating instruments.

The measured discharge was 47,383 cubic feet per second, sectional area 10,992, and therefore mean velocity 4·3 feet per second. But at time of measurement the river was 5 feet above minimum level of the year, and this 5 feet rise has been computed to produce an increased sectional area of 4,617 superficial feet and discharge of 20,181 cubic feet.

Thus the discharge of the Dibang river + Senseri river at the low level of year is 27,202 cubic feet per second, sectional area 6,375 superficial feet and mean velocity 4·2 feet per second. But the Senseri river brings down about 1,200 cubic feet, so that the low level discharge volume of the Dibang river is 26,000 cubic feet per second.

During the high floods the river rises 20 feet, but like the Dihang computations an ordinary flood of 15 feet has been calculated for, and

then the flood discharge is 122,483 cubic feet per second, sectional area 23,692 superficial feet, and mean velocity 5·2 feet per second.

For an extreme flood of 18 feet, the discharge would exceed 144,000 cubic feet, the sectional area be 27,700 superficial feet, and mean velocity 5·2 feet per second.

The next river measured was the Brahmaputra river at about 9 miles above Sadiya and half a mile below the mouth of the united stream of the Tengapáni aud Noa Dihing rivers. There was a good deal of difficulty found in the measurement of this river on account of bad weather and the level of the water not remaining constant. The section was made when the river was at 3 feet above the low level of the year, but most of the velocities were measured when the river was at a slightly higher level. These facts were kept in view when the calculations were made.

The measurements were made between April 2nd and 6th of 1878. For the section, 61 soundings were made, observations for velocity were taken at 14 stations, and there were 165 recorded passages of floating instruments.

The measured discharge was 66,251 cubic feet per second, sectional area 16,396, so that the mean velocity was 4 feet per second. At time of measurement the river was 3 feet above the minimum level of the year: the increased volume due to this rise was computed to be 32,419 cubic feet per second, and sectional area 8,168 superficial feet; so that the mean low-level dry season discharge of the Brahmaputra river below Tengapáni-muk is 33,832 cubic feet per second, sectional area 8,228 superficial feet, and, consequently, mean velocity 4·1 feet per second.

To obtain the minimum discharge of the Brahmaputra at the Brahmakund, it will be necessary to deduct from the above figures, the cold season mean low-level volume of the Tengapáni and Noa Dihing (which is stated below to be 3,000 cubic feet per second), and that of the Digaru river which I would estimate from hearsay at 5,000 cubic feet per second. Thus the minimum discharge of the Brahmaputra at the Brahmakund would be 25,000 cubic feet per second.

The ordinary high flood of the Brahmaputra below Tengapáni-muk has been calculated at 16 feet. It gives a discharge of 293,000 cubic feet per second, a sectional area of 53,017 superficial feet and mean velocity of flood 5·5 feet per second. For the flood discharge at the Brahmakund one should subtract from above discharge 53,000 cubic feet for the Tengapani and Noa Dihing rivers (vide below), and I would estimate 60,000 for the Digáru river, which would leave 180,000 cubic feet per second for flood discharge of the Brahmaputra at the Brahmakund.

For an extreme flood of 18 feet the discharge below Tengapáni-muk would be over 326,000 cubic feet per second, sectional area 59,000 superficial feet and mean velocity 5·5 feet per second; then calculating by pro-

portion, the extreme flood of the Brahmaputra at the Brahmakund would be not less than 200,000 cubic feet per second.

Before closing work at Tengapáni-muk I thought it well to make a measurement of the united stream of the Tengapáni and Noa Dihing rivers. This I did on the 6th April 1878 at a site 200 yards below the junction of the Tengapáni and Noa Dihing rivers. At the time of measurement the water was fully 3 feet above mean low level of the year, and more than half of it came from the Noa Dihing river.

For the section 18 soundings were made, observations for velocity were taken at 2 stations and there were 19 recorded passages of the floating instruments.

The measured discharge was found to be 6,807 cubic feet per second, sectional area 2,203 superficial feet, mean velocity 3·1 feet per second.

At the time of measurement the river was 3 feet above minimum level of the year; it is computed that for the low level of the year the discharge is 3,000 cubic feet, area of section 900 superficial feet, and velocity 3·3 feet per second; and of this 3,000 cubic feet, 2,500 cubic feet comes from the Tengapáni river.

For an ordinary high flood rise of 15 feet, the discharge is computed to be 53,000 cubic feet per second, sectional area 10,400 superficial feet and mean velocity 5·1 feet per second.

For an extreme flood rise of 18 feet, the discharge is 65,000 cubic feet, sectional area 12,800 superficial feet and mean velocity 5·1 feet per second.

From the Synopsis Table attached, it will be seen how closely the sum of the volumes &c. observed, for the two great streams which form the Brahmaputra River, agree with the observed volume of the river at Dibrugarh. . The river at Dibrugarh should be of greater volume than the combined Dihang and Sadiya streams, because of the Lali channel of the Dihang which joins in just below the place where the section of the Dihang and Dibang was taken. During the cold season, and at time of observations it was a small and fordable stream 100 yards wide, but during floods the channel brings down a very large volume of water.

During the floods a considerable volume of water passes down the Buri Suti, the mouth of which is on the north bank and between Dibrugarh and the mouth of the Dihang river.

The Buri Suti falls into the Brahmaputra near the mouth of the Dihing river, south of Dibrugarh.

I have endeavoured to be as moderate as possible in my estimates of the flood discharges, but I think it may fairly be stated that at Poba, a few miles above the mouth of the Buri Suti, there is every season a flood when 1½ million cubic feet per second passes down the Brahmaputra. The rise of the flood I have calculated at 15 to 18 feet. The rise at Gauháti is 28 to 30 feet.

Synopsis Table. Results of

Name of River.	Discharge in cubic ft. per second at mean low level of the year.	Sectional area in Sup. ft. at mean low level of the year.	Mean velocity in feet per second at mean low level of the year.	Discharge at ordinary High Floods.	Sectional area at ordinary High Floods.	Mean velocity in feet per second at ordinary High Floods.	Discharge at extreme High Floods.
Dihang + Dibang River,..	82,652 (*d*)	18,883 (*d*)	4·3 (*d*)	485,000 (*d*)	84,000 (*d*)	5·7 (*d*)	567,000 (*e*) (18 ft. rise)
Brahmaputra River, above Sadiya and below mouth of the Tengapáni River	33,832 (*d*)	8,228 (*d*)	4·1 (*d*)	293,000 (*d*) (16 ft. rise)	53,017 (*d*) (16 ft. rise)	5·5 (*d*)	326,000 18 ft. (*e*)
Total,....	116,484	27,111	4·2 about	778,000	137,017	5·6 about	893,000
Brahmaputra River at Dibrugarh. *	116,115 (*o*)	24,477 (*o*)	4·6 (*o*)	830,000 (*d*)	164,000	5·0	1,100,000 (*e*)
Difference,....	—369	....	....	+ 52,000	....	....	+107,000
Dibang River, below mouth of Senseri River.	27,202 (*d*)	6,375 (*d*)	4·2 (*d*)	122,483 (*d*)	23,692 (*d*)	5·2 (*d*)	144,000 18 ft. rise
Senseri River, ...	1,200 (*e*)	....	....	12,000 (*e*)	....	....	14,000 (*e*)
Dihang River (less the Lalisuti.)	55,400 (*d*)	....	....	362,517 (*d*)	....	....	423,000 (*e*) 18 ft. rise
Tengapáni + Noa Dihing,	3,000 (*d*)	900 (*d*)	3·3 (*d*)	53,000 (*d*) 15 ft. rise	10,400 (*d*) 15 ft. rise	5·1 (*d*)	65,000 (*e*) 18 ft. rise
Tengapáni River, ...	2,500 (*e*)	....	....	22,000 (*e*)	....	....	26,000 (*e*)
Noa Dihing River, ...	500 (*e*)	....	....	....	....	....	....
Digáru River, ...	5,000 (*e*)	....	....	60,000 (*e*)	....	....	75,000 (*e*)
Subansiri River, ...	16,945 (*o*)	9,637 (*o*)	1·7 (*o*)	170,000	35,700	4·7	240,000
Brahmaputra at the Brahmakund.	25,000 (*d*)	....	....	180,000 (*d*) 16 ft. rise	....	..	200,000 (*d*) 18 ft. rise

Note: (*o*) means observed value.
(*d*) „ deduced value by computation.
(*e*) „ estimated value.

Discharge Measurements.

Sectional area at extreme High Floods.	Mean velocity in feet per second at extreme High Floods.	Measured discharge of River, when it was 3 ft. above mean low level of year.	Measured Sectional area when river was 3 ft. above mean low level of year.	Observed mean velocity when river was 3 ft. above mean low level of the year.	Date of Measurements.	Site of Section.	No. of Soundings taken for Section.	No. of Stations at which observations were made for velocity.	No. of recorded Passages of Floating Instruments.	Remarks.
					1878.					
98,000 (e) (18 ft. rise)	5·8 (e) (18 ft. rise)	110,011 (o)	25,105 (o)	4·4 (o)	24th to 27th March	1 mile S. of mouth of Dibang river & 1 mile above junction with Brahmaputra.	59	12	170	
59,000 (e) (18 ft. rise)	5·5 (e)	66,251 (o)	16,396 (o)	4·0 (o)	April 3rd to 6th.	9 miles above Sadiya and ½ of a mile below the mouth of the Tengapani River.	61	14	165	
157000	5·7 about	176,262	41,501	4·2 about						
208000 (e)	5·3 (e)	170,915	38,500	4·4	March 16th, 17th,	at a place due N. of and 3 miles from Dibrugarh.	120	14	255	* Vide Memoir, Page 15.
....	....	—5,347	....	....	18th.					
27,700 (18 ft. rise)	5·2	47,383 (o) at 5ft. above mean low level of the year.	10,992 (o) at 5 ft. above mean low level of the year.	4·3 (o) at 5 ft. above mean low level of the year.	March 27th.	¼ mile below the mouth of the Senseri River.	37	9	116	
....	....	....	....	....	....					
....	....	....	....	....	....					
12,800 (e) (18 ft. rise)	5·1 (e)	6,807 (o)	2,203 (o)	3·1 (o)	April 6th.	200 yards below junction of Tengapani River with Noa Dihing River.	18	2	19	
....	....	2,500 (e)	....	....	....					
....	....	4,307 (e)	....	....	....					
....	....	....	....	....	....					
48,700	4·9	....	....	....	....					
....	....	....	....	....	Febr. 25th to 28th.	Pathalipam village, 3 miles west of Gogah Muk.	90	21	510	
							385	72	1,235	

H. J. Harman, Lieut. R. E.
Survey of India.

October, 1878.

SUBANSIRI RIVER.

Computations of Discharge.

Observations taken February 26th, 27th, 28th of 1878.
Length of Run 50 feet. Magnetic Bearing of Section lines 330°.

Station Nos. at extremity of each portion. (1)	Depth at Station. (2)	Length of portion on section line. (3)	Length of portion for Computation. (4)	Depth of portion for Computation. (5)	Observed flow of floats at Stations. (Mag.) (6)	Angle of Flow of Water for Computation. (7)	Mean time of Passage of Floats at Stations. (8)	Mean time of Passage, for Computation. (9)	Multiplication.	Area of portion. (10)	Discharge per second through portion. (11)
	Feet.	Feet.	Feet.	Feet.			Seconds.	Seconds.		Sup. Ft.	Cub. Ft.
left bank	0				..						
to		140	140	2		..		40·0	$140 \times 2 \times \frac{50}{40}$	280	350
63	4				..		35				
63	4				..		35				
to		75	74	5·5		8°		30·0	$74 \times 5{\cdot}5 \times \sec. 8° \times \frac{50}{30}$	407	685
62	7				250°		24				
62	7				250°		24				
to		78	77	8		$12\frac{1}{2}°$		22·0	$77 \times 8 \times \sec. 12\frac{1}{2}° \times \frac{50}{22}$	616	1,434
64	9				255°		20				
64	9				255°		20				
to		34	34	9·5		15°		19·75	$34 \times 9{\cdot}5 \times \sec. 15° \times \frac{50}{19{\cdot}75}$	323	847
44	10				255°		19·5				
44	10				255°		19·5				
to		42	41	10·25		16°		20·25	$41 \times 10{\cdot}25 \times \sec. 16° \times \frac{50}{20{\cdot}25}$	420	1,079
45	10·5				..		21·0				

45 to 61	10·5 12	64	63	11·25	.. 262°	20°	21·0 22·0	21·50	$63 \times 11{\cdot}25 \times \sec.\ 20° \times \frac{50}{21{\cdot}50}$	709	1,755
61 to 41	12 10	117	114	11	262° 260°	21°	22·0 28·0	25·0	$114 \times 11 \times \sec.\ 21° \times \frac{50}{25}$	1,254	2,686
41 to 46	10 12	30	30	11	260° 261°	$20\frac{1}{2}°$	28·0 29·0	28·50	$30 \times 11 \times \sec.\ 20\frac{1}{2}° \times \frac{50}{28{\cdot}50}$	330	618
46 to 58	12 11	44	44	11·5	261° 257°	19°	29·0 29·0	29·0	$44 \times 11{\cdot}5 \times \sec.\ 19° \times \frac{50}{29}$	506	923
58 to 47	11 9	76	75	10	257° 260°	$18\frac{1}{2}°$	29·0 31·0	30·0	$75 \times 10 \times \sec.\ 18\frac{1}{2}° \times \frac{50}{30}$	750	1,318
47 to 65	9 11·5	72	71	10·25	260° 252°	16°	31·0 35·0	33·0	$71 \times 10{\cdot}25 \times \sec.\ 16° \times \frac{50}{33}$	728	1,147
65 to 48	11·5 11·75	15	15	11·6	252° 254°	13°	35·0 37·0	36·0	$15 \times 11{\cdot}6 \times \sec.\ 13° \times \frac{50}{36}$	174	248
48 to 66	11·75 12·0	21	21	11·8	254°	13°	37·0 42·0	39·5	$21 \times 11{\cdot}8 \times \sec.\ 13° \times \frac{50}{39{\cdot}5}$	248	322
66 to 49	12·0 11·75	43	43	11·9	.... 252°	12°	42·0 48·5	45·25	$43 \times 11{\cdot}9 \times \sec.\ 12° \times \frac{50}{45{\cdot}25}$	512	578
49 to 42	11·75 11·50	34	34	11·6	252° 253°	13°	48·5 47·0	47·50	$34 \times 11{\cdot}6 \times \sec.\ 13° \times \frac{50}{47{\cdot}50}$	394	426

SUBANSIRI RIVER,—*Continued.*

Station Nos. at extremity of each portion. (1)	Depth at Stations. (2)	Length of portion on section line. (3)	Length of portion for Computation. (4)	Depth of portion for Computation. (5)	Observed flow of floats at Stations. (Mag.) (6)	Angle of Flow of Water for Computation. (7)	Mean time of Passage of Floats at Stations. (8)	Mean time of Passage, for Computation. (9)	Multiplication.	Area of portion. (10)	Discharge per second through portion. (11)
	Feet.	Feet.	Feet.	Feet.			Seconds.	Seconds.		Sup. Ft.	Cub. Ft.
42	11·50				255°		47·0				
to		27	27	11·75		11°		46·0	$27 \times 11{\cdot}75 \times \sec. 11° \times \frac{50}{46}$	317	351
50	12·0				248°		45·0				
50	12·0				248°		45·0				
to		55	54	12		8°		40·5	$54 \times 12 \times \sec. 8° \times \frac{50}{40{\cdot}5}$	648	808
67	12·25				....		36·0				
67	12·25				....		36·0				
to		40	40	12·25		7°		36·0	$40 \times 12{\cdot}25 \times \sec. 7° \times \frac{50}{36}$	490	686
43	12·00				247°		36·0				
43	12·00				247°		36·0				
to		12	12	11·9		4°		34·0	$12 \times 11{\cdot}9 \times \sec. 4° \times \frac{50}{34}$	143	211
51	11·75				242°		32·0				
51	11·75				242°		32·0				
to		18	18	10·5		....		37·0	$18 \times 10{\cdot}5 \times \frac{50}{37}$	189	255
52	9·25				....		42·0				
52	9·25				....		42·0				
to		13	13	8·0		....		46·0	$13 \times 8 \times \frac{50}{46}$	104	113
53	7·00				....		50·0				

53 to right bank	7·0 / 0·0	27	27	3·5	.... /	....	50·0	50·0	$27 \times 3{\cdot}5 \times \frac{50}{50}$	95	95
									Total, ...	9,637	16,945

Width of water 1,070 feet. Mean velocity = 1·7 ft. per second.
For Flood Discharge, rise 16 feet, width of water 2,120 feet. Divide it into 4 parts,—

One of 600 feet in width, having a flood velocity of 7 feet per second, gives a discharge of 600 × 16 × 7, ...	67,000
One of 500 feet, depth 16 feet, velocity 6 feet per second, 500 × 16 × 6, ...	48,000
One of 500 feet, mean depth 12 feet, velocity 5 feet per second, 500 × 12 × 5, ...	30,000
One of 500 feet, mean depth 5 feet, velocity 3 feet per second, 500 × 5 × 3, ...	8,000
Flood Discharge, in cubic feet, per second, about, ...	153,000
To above measured discharge, add measured discharge, ...	16,945
Total Flood Discharge at ordinary High Flood, ...	170,000

Area of Section = 35,700 superficial feet, and mean velocity of flood = 4·7 feet per second.

H. J. Harman, Lieut. R. E.
Survey of India.

October, 1878.

BRAHMAPUTRA RIVER

NEAR DIBRUGARH.

March 16*th*, 17*th*, 18*th*, 1878.

Computation of Discharge.

Length of "Run" = 75 feet. Magnetic Bearing of Section lines = $348\frac{1}{2}°$.

Station Nos. at extremity of each portion. (1)	Depth at Stations. (2)	Length of portion on section line. (3)	Length of portion for Computation. (4)	Depth of portion for Computation. (5)	Observed flow of floats at Stations. (6)	Angle of Flow of Water for Computation. (7)	Mean time of Passage of floats over Run at Station. (8)	Time of Passage for Computation. (9)	Multiplication. (10)	Area of portion. (11)	Discharge per second through portion. (12)
	Feet.	Feet.	Feet.	Feet.			Seconds.	Seconds.		Sup. Ft.	Cub. Ft.
left bank to 109	0 to 26	50	50	13	....	....	16	18	$50 \times 13 \times \frac{75}{18}$	650	2,708
109 to 106	26 to 29	70	70	27·50	255°	3°	16 to 15	15·5	$70 \times 27{\cdot}50 \times \sec. 3° \times \frac{75}{15{\cdot}75}$	1,925	9,327
106 to 103	29 to 34	55	55	31·5	255° to 254°	4°	15 to 14·5	14·75	$55 \times 31{\cdot}5 \times \sec. 4° \times \frac{75}{14{\cdot}75}$	1,733	8,831
103 to 100	34 to 35	72	71	34·5	254° 254°	$4\frac{1}{2}°$	14·5 14·5	14·5	$71 \times 34{\cdot}5 \times \sec. 4\frac{1}{2}° \times \frac{75}{14{\cdot}5}$	2,450	12,709
100 to 97	35 to 31	62	61	33	254° 253°	5°	14·5 15·0	14·75	$61 \times 33 \times \sec. 5° \times \frac{75}{14{\cdot}75}$	2,013	10,275

97 to 85	31 / 27	61	60	30	253° / 253°	$5\frac{1}{2}$°	15·0 / 14·5	14·75	$60 \times 30 \times \sec. 5\frac{1}{2} \times \frac{75}{14 \cdot 75}$	1,800	9,195
85 to 94	27 / 20	108	105	23·5	253° / 248°	8°	14·5 / 15·0	14·75	$105 \times 23 \cdot 5 \times \sec. 8° \times \frac{75}{14 \cdot 75}$	2,468	12,670
94 to 88	20 / 17	116	112	18·5	248° / 247°	11°	15·0 / 14·5	14·75	$112 \times 18 \cdot 5 \times \sec. 11° \times \frac{75}{14 \cdot 75}$	2,072	10,733
88 to 91	17 / $12\frac{1}{2}$	257	252	14·75	247° / 253°	8°	14·5 / 16·0	15·25	$252 \times 14 \cdot 75 \times \sec. 8° \times \frac{75}{15 \cdot 25}$	3,717	18,460
91 to 112	$12\frac{1}{2}$ / $11\frac{1}{2}$	55	54	12·0	253° / 255°	$4\frac{1}{2}$°	16·0 / 15·5	15·75	$54 \times 12 \times \sec. 4\frac{1}{2}° \times \frac{75}{15 \cdot 75}$	648	3,095
112 to 121	$11\frac{1}{2}$ / $9\frac{1}{2}$	107	107	10·5	255° / 266°	....	15·5 / 18·0	16·75	$107 \times 10 \cdot 5 \times \frac{75}{16 \cdot 75}$	1,123	5,031
121 to 122	$9\frac{1}{2}$ / $5\frac{1}{2}$	283	277	7·5	266° / 266°	8°	18·0 / 20·0	19·0	$277 \times 7 \cdot 5 \times \sec. 8° \times \frac{75}{19}$	2,078	8,281
122 to right bank in portions.											
(*a*) 122 station to 51 sounding.	$5\frac{1}{2}$ / $3\frac{1}{2}$	80	80	4·5	....	....	....	75	$80 \times 4 \cdot 5 \times \frac{75}{75}$	360	360

BRAHMAPUTRA RIVER,—*Continued.*

Station Nos. at extremity of each portion. (1)	Depth at Station. (2)	Length of portion on section line. (3)	Length of portion for Computation. (4)	Depth of portion for Computation. (5)	Observed flow of floats at Station. (6)	Angle of Flow of Water for Computation. (7)	Mean time of Passage of floats over Run at Stations. (8)	Time of Passage for Computation. (9)	Multiplication. (10)	Area of portion. (11)	Discharge per second through portion. (12)
	Feet.	Feet.	Feet.	Feet.			Seconds.	Seconds.		Sup. Ft.	Cub. Ft.
(*b*) 51 sounding to 57 sounding.	3·5 2·0	277	275	2·75	....	....	....	75	$275 \times 2{\cdot}75 \times \frac{7}{7}\frac{5}{5}$	756	756
(*c*) 57 sounding to near 60 sounding.	2·0 0·0	85	85	1·0	....	....	....	75	$85 \times 1 \times \frac{7}{7}\frac{5}{5}$	85	85
(*d*) near 60 sounding to 66 sounding.	7·0 4·0	87	87	5·5	....	....	....	75	$87 \times 5{\cdot}5 \times \frac{7}{7}\frac{5}{5}$	479	479
(*e*) 66 sounding to edge of sand.	3·25 0·0	80	80	1·5	....	....	....	75	$80 \times 1{\cdot}5 \times \frac{7}{7}\frac{5}{5}$	120	120
									Total,....	24,477*	113,115*

Width of water 1,881 feet. Mean velocity 4·6 feet per second.

For the flood discharge, at ordinary high floods; add to measured discharge:

Width of portion in feet.		*Depth.*		*Vely. per second in feet*		*Discharge per sec. Cubic ft.*
900	×	16	×	7·5	=	108,000
900	×	16	×	6	=	87,000
2000	×	12	×	4·5	=	108,000
2000	×	12	×	4	=	96,000
1600	×	16	×	6	=	154,000
1800	×	14	×	4	=	101,000
1500	×	8	×	5	=	60,000
				Total,	=	714,000

The measured discharge	= 714,000
Add for filtration through the sand, and volume of the unmeasured "Suti" (channel), *vide* memoir	= 3,000
Total flood discharge exceeds, ...	= 830,000 cubic ft. per second; mean flood velocity, 5 ft. per second.

Supfl. area of flood section above measured section	= 139,600
„ „ measured section, ...	= 24,477
Total superficial area of the section of river at ordinary flood level, ..	= 164,000

The measured discharge was obtained at minimum level of the year. The effect of increased volume of river for a 3 ft. rise, above minimum level is—

	50	×	3	× 4·5	=	675
	960	×	3	× 5·5	=	15,840
	283	×	3	× 4	=	3,396
	610	×	3	× 3	=	5,490
Sand covered, ...	400	×	1·5	× 2	=	1,200
Intermediate "Suti,"	1600	×	3	× 4	=	19,200
„ Sands,..	1500	×	2	× 3	=	9,000

Total increase in volume of river for a 3 ft. rise above minimum of year is = 54,800 cubic ft. per second.

Increase in area of section in superficial feet = 14·100 Sup. Ft.

* *Vide* memoir: add 3000 ft. for filtration through an unmeasured side channel, which brings the discharge up to 116,000 cubic ft. per second.

UNITED DIHANG AND DIBANG RIVERS.

Computation of Discharge.

March 25th—27th of 1878.

Length of Run = 75 feet. Magc. Bearing of Section lines 280½.

Station Nos. at extremity of each portion. (1)	Depth at Stations. (2)	Length of portion on section line. (3)	Length of portion for Computation. (4)	Depth for Computation. (5)	Observed flow of floats at Stations. (6)	Angle of flows of water with Section lines for Computation. (7)	Observed mean time of passage of floats over Run at Station. (8)	Time of passage over Run for Computation. (9)	Multiplication. (10)	Area of portion. (11)	Discharge through portion per second. (12)
	Feet.	Feet.	Feet.	Feet.			Seconds.	Secs.		Sup. Ft.	Cub. Ft.
right bank	0				..		..				
to		196	193	1·5		6°		63	$193 \times 1{\cdot}5 \times \sec. 6° \times \frac{75}{63}$	290	347
59	3				196°		42				
59	3				196°		42				
to		170	170	4·625		4°		34	$160 \times 4{\cdot}625 \times \sec. 4° \times \frac{75}{34}$	786	1,739
58	6·25				192°		26				
58	6·25				192°		26				
to		158	155	8·00		1°		22·5	$155 \times 8 \times \sec. 1° \times \frac{75}{22{\cdot}5}$	1,240	4,134
57	9·75				191°		19				
57	9·75				191°		19				
to		292									
56	12·75				193°		16				
in											
2 portions	(*a*)	167	166	11.25		2°		18	$166 \times 11{\cdot}25 \times \sec. 2° \times \frac{75}{18}$	1,868	7,786
(*a*) & (*b*)	(*b*)	125	123	12·5		2°		16	$123 \times 12{\cdot}5 \times \sec. 2° \times \frac{75}{16}$	1,534	7,211

56 to 55	12·25 / 11·00	138	137	11·625	193° / 195°	4°	16 / 15	15·5	$137 \times 11{\cdot}625 \times \sec. 4° \times \frac{75}{15.5}$	1,593	7,725
55 to (*a*) 51	11 / 10·5	10.75	77	76	195°	5°	..	15	$76 \times 10{\cdot}75 \times \sec. 5° \times \frac{75}{15}$	817	4,101
in 2 parts (*b*)	10·33	11·00	147	146	195° / 190°	2°	..	16	$146 \times 11{\cdot}0 \times \sec. 2° \times \frac{75}{16}$	1,606	9,533
(*a*) & (*b*)	11·5										
51 to 52	12 / 14	333	333	13	190° / 190°	0	16 / 18·5	17·25	$333 \times 13 \times \frac{75}{17.25}$	4,329	18,822
52 to 50	14 / 13·25	295	295	13·625	° / 190°	0	18·5 / 15	16·75	$295 \times 13{\cdot}625 \times \frac{75}{16.75}$	4,019	17,997
50 to (*a*) 49	13·25 / 15·25	90	90	14·25	190° / 185° / 189°	1°	..	14	$90 \times 14{\cdot}25 \times \sec. 1° \times \frac{75}{14}$	1,283	6,872
in 2 parts (*b*) (*a*) & (*b*)	15·25 / 12·25	150	148	13·75	..	3°	..	13·75	$148 \times 13{\cdot}75 \times \sec. 3° \times \frac{75}{13.75}$	2,035	11,115
64 to 53	12·0 / 12·75	153	151	12·4	185° / 185°	5°	13 / 15	14	$151 \times 12{\cdot}4 \times \sec. 5° \times \frac{75}{14}$	1,872	10,069

UNITED DIHANG AND DIBANG RIVERS,—*Continued.*

Station Nos. at extremity of each portion. (1)	Depth at Stations. (2)	Length of portion on section line. (3)	Length of portion for Computation. (4)	Depth for Computation. (5)	Observed flow of floats at Stations. (6)	Angle of flows of water with Section lines for Computation. (7)	Observed mean time of passage of floats over Run at Stations. (8)	Time of passage over Run for Computation. (9)	Multiplication. (10)	Area of portion. (11)	Discharge through portion per second. (12)
	Feet.	Feet.	Feet.	Feet.			Seconds.	Secs.		Sup. Ft.	Cub. Ft.
	12·75				185°		15				
53		140									
to (*a*)	7·5				175°		50				
54		65	64	10·125		5°		16	$64 \times 10{\cdot}125 \times \sec\ 5° \times \frac{75}{16}$	648	3,049
in 2 parts											
(*b*)		76	74	7·5		10°		48	$74 \times 7{\cdot}5 \times \sec.\ 10° \times \frac{75}{48}$	555	881
54	7·5										
to		180	3·5	..	..	..	..	75	$180 \times 3{\cdot}5 \times \frac{75}{75}$	630	630
left bank	0										
									Total,	25,105	110,011

Total width of water 2,510 ft. Mean velocity in ft. per second 4·4 ft.

For Flood Discharge at the ordinary $300 \times 13 \times 5 = 19{,}500$
High Floods add: $2500 \times 15 \times 7 = 262{,}500$
$600 \times 14 \times 5 = 42{,}000$
$200 \times 16 \times 6 = 19{,}200$
$800 \times 13 \times 5 = 52{,}000$
$200 \times 9 \times 4 = 7{,}200$

402,400
The measured Discharge 82,652

Flood Discharge of Dihang + Dibang Rivers 485,000
From this subtract Flood Discharge of Dibang 122,483

Flood Discharge of Dihang 362,517

	Sup. Feet.
Area of Flood Section above measured Section	65,200
Add area of Section at minimum level of year (see below)	18,883
Total area of Flood Discharge of united Dihang and Dibang,.....	84,000

The mean velocity is 5·7 ft. per second.

At time of measurement the river was 3 ft. above minimum level of year.
The increased volume above minimum discharge due to this rise of 3 ft. is

170 × 3 × 3·5	=	1,785
654 × 3 × 5·0	=	9,810
628 × 3 × 4	=	7,536
391 × 3 × 5	=	5,865
65 × 3 × 5	=	975
76 × 3 × 2	=	456
90 × 3 × 1	=	270
		26,697
		347 } Add measured volume
		315 } of water passing over sands not covered at minimum.
Increase in volume due to a 3 ft. rise over minimum		27,359
The measured Discharge		110,011
		82,652 Discharge of Dihang +
The minimum discharge of Dibang		27,200 Dibang at minimum.
Minimum Discharge of Dihang ..		55,452 Cubic ft. per second.

	Sup. Feet.
The increase in area of Section for a 3 ft. rise over minimum level is	6,222
The measured area of Section is	25,105
Thus the area of Section at minimum, of Dihang + Dibang is	18,883

And mean velocity is 4·3 ft. per second.

DIBANG RIVER.

Discharge Computations.

March 27th, 1878.

Length of Run = 50 ft. Magnetic Bearing of Section lines 359½°.

The Station Nos. at extremity of portions. (1)	Depth at Stations. (2)	Length of portions. (3)	Length of portion for Computation. (4)	Depth for Computation. (5)	Observed flow of floats at Stations. (6)	Angle of flow of water with Section line for Computation. (7)	Mean time of passage of floats over Run at Stations. (8)	Time of passage over Run for Computation. (9)	Multiplication. (10)	Area of portion in Superficial Feet. (11)	Discharge per second through portion. (12)
	Feet.	Feet.	Feet.	Feet.			Seconds.	Secs.		Sup. Ft.	Cub. Ft.
right bank	0				..						
to		33	33	10		..	11·0	12·0	$33 \times 10 \times \frac{50}{12}$	330	1,375
32	16				..						
32	16				271°		11·0				
to		68	68	16·5		..		10·75	$68 \times 16{\cdot}5 \times \frac{50}{10{\cdot}75}$	1,122	5,180
51	17				268°		10·5				
31	17										
to (*a*)		70	70	17·25	..	..	..	10·5	$70 \times 17{\cdot}25 \times \frac{50}{10{\cdot}5}$	1,208	5,750
33	17·5										
in 2 parts											
(*a*) (*b*)	17·5				668°						
(*b*)		146	144	15·75		3°	..	10·5	$144 \times 15{\cdot}75 \times \sec. 3° \times \frac{50}{10{\cdot}5}$	2,268	10,815
	14				264°						
33	13				264°		10·5				
to		62	61	13·0		5°		10·0	$61 \times 13 \times \sec. 5° \times \frac{50}{11}$	793	3,618
30	13				265°		11·5				

30 to 29	13 / 10·25	252	250	11·6	265° / 266°	4°	11·5 / 12·5	12·0	$250 \times 11{\cdot}6 \times \text{sec. } 4° \times \frac{50}{12}$	2,900	12,113
29 to 34	10·25 / 10·00	17	17	10·13	266° / 264°	$4\frac{1}{2}°$	12·5 / 12·5	12·5	$17 \times 10{\cdot}13 \times \text{sec. } 4\frac{1}{2}° \times \frac{50}{12{\cdot}5}$	172	691
34 to 35	10·0 / 10·25	88	87	10·13	264° / 264°	$5\frac{1}{2}°$	12·5 / 13·5	13·0	$87 \times 10{\cdot}13 \times \text{sec. } 5\frac{1}{2}° \times \frac{50}{13}$	881	3,405
35 to 36	10·25 / 6·0	117	116	8·13	264° / 268°	3	13·5 / 15·0	14·28	$116 \times 8{\cdot}13 \times \text{sec. } 3° \times \frac{50}{14{\cdot}25}$	943	3,314
36 to 37	6·0 / 5·0	46	46	5·5	268° / 270°	..	15·0 / 16·0	15·5	$46 \times 5{\cdot}5 \times \frac{50}{15{\cdot}5}$	253	816
37 to left bank.	5·0 / 0·0	49	49	2·5	..	..	16·0	20·0	$49 \times 2{\cdot}5 \times \frac{50}{23}$	122	306
									Totals, ..	10,992	47,383

Width of Water = 950 feet. Mean Velocity = 4·3 feet per second.

DIBANG RIVER.

For Flood Discharge of Dibang River.
add to the measured Discharge.

Length of portion in feet.		*Depth.*		*Velocity in Ft. per second.*		
740	×	10	×	7	=	51,800
210	×	10	×	5	=	10,500
400	×	8	×	4	=	12,800
						75,100
				The measured Discharge,	=	47,383
				Discharge of Dibang River during ordinary High flood,	=	122,483, Cu. ft. per second.
				The area of flood Section above level of water during measurements,	=	12,700 S. Ft.
				add measured Section,	=	10,992
				Area of ordinary High Flood section,	=	23,692 S. Ft.

Hence mean Velocity of flood is 5·2 ft. per second.

At the time of measurement of Discharge the river was 5 ft. above minimum of year; the volume of a 5 ft. rise over the minimum volume of river during the year is—

379 × 5 × 5 = 9,475
520 × 5 × 4 = 10,400

19,875
add 306 measured volume of water passing over sands covered by a 5 ft. rise above low level of the year.

20,181—Total increase in volume of the river due to a 5 ft. rise above lowest level of the year.
47,383 observed Discharge.

27,202 Cu. ft. Discharge of Dibang river at minimum.

The area of Section is 6,375 Sup. Ft. and Mean velocity = 4·2 ft. per second.

H. J. Harman, Lieut. R. E.
Survey of India.

October, 1878.

BRAHMAPUTRA RIVER ABOVE SADIYA.

COMPUTATION OF DISCHARGE.

April 3rd to 6th of 1878.

Length of Run = 50 feet — Magnetic Bearing of Section lines 318½°.

Station Nos. at extremity of each portion. (1)	Depth at Station. (2)	Length of portion on section line. (3)	Length of portion for Computation. (4)	Depth of portion for Computation. (5)	Observed flow of floats at Station. (6)	Angle of flow of water for Computation. (7)	Mean time of passage of floats over Run at Station. (8)	Mean time of passage for Computation. (9)	Multiplication. (10)	Area of portion. (11)	Discharge per second through portion. (12)
	Feet.	Feet.	Feet.	Feet.			Seconds.	Seconds.		Sup. Ft.	Cub. Ft.
right bank	0				parallel						
to		110	105	9	to right	8°	9·5	10	$105 \times 9 \times \sec. 8° \times \frac{50}{10}$	045	4,771
62	14				bank.						
62	14	143					9·5				
to							10·0				
63	13·5										
in 2 parts											
(*a*)	$\frac{14}{18}$	98	96	16		8°		9·5	$96 \times 16 \times \sec. 8° \times \frac{50}{9·5}$	1,536	8,164
	18										
(*b*)		47	47	15·75		8½°		10·0	$47 \times 15·75 + \sec. 8½° \times \frac{50}{10}$	740	3,742
	13·5										
63	13·5	285			220°		10·0				
to						8½°					
66	9·25				220°		10·5				
in 2 parts											
(*a*)	13·5	13·25	220	215		8½°		10·2	$215 \times 13·25 \times \sec. 8½° \times \frac{50}{10·2}$	2,846	14,120
	13	(5)	(3)	(4)							
	13										
(*b*)		65	64	11·13		8½°		10·4	$64 \times 11·13 \times \sec. 8½° \times \frac{50}{10·4}$	712	3,463
	9·25										

BRAHMAPUTRA RIVER ABOVE SADIYA.—*Continued.*

Stations Nos. at extremity of each portion. (1)	Depth at Station. (2)	Length of portion on section line. (3)	Length of portion for Computation. (4)	Depth of portion for Computation. (5)	Observed flow of floats at Stations. (6)	Angle of flow of water for Computation. (7)	Mean time of passage of floats over Run at Stations. (8)	Mean time of passage for Computation. (9)	Multiplication. (10)	Area of portion. (11)	Discharge per second through portion. (12)
	Feet.	Feet.	Feet.	Feet.			Seconds.	Seconds.		Sup. Ft.	Cub. Ft.
66	9·25	150	147	8	220°	6½°	10·5	12·5	$147 \times 8 \times \sec. 6\frac{1}{2}° \times \frac{50}{12 \cdot 5}$	1,176	4,734
to					224°		14·5				
67	6·75										
67	6·75	141	141	5·3	224°	....	14·5	14·75	$141 \times 5 \cdot 3 + \frac{50}{14 \cdot 75}$	747	2,533
to					235°		15·0				
64	4·00										
64	4·0	247	240	3·5	235°	10°	15·0	16·0	$240 + 3 \cdot 5 \times \sec. 10° \times \frac{50}{16 \cdot 0}$	840	2,665
to					240°		17·0				
65	3·75										
65	3·75	278	270	4	240°	12½°	17·0	17·0	$270 \times 4 \times \sec. 12\frac{1}{2}° \times \frac{50}{17}$	1,080	3,254
to	5·25				240°		17·0				
70	midway										
	3·25										
70	3·25	290	280	2	240°	13½°	17·0	16·0	$280 \times 2 \times \sec. 13\frac{1}{2}° \times \frac{50}{16}$	560	1,800
to	1 midway				243°		15·0				
71	4·0										
71	4·0	78	76	4	243°	12°	15·0	14·75	$76 \times 4 \times \sec. 12° \times \frac{50}{14 \cdot 75}$	304	1,054
to					238°		14·0				
69	4·25										

69 to 72	4.25 5·50	230	227	4·8	238° 237°	9°	14·5 14·0	14·25	$227 \times 4{\cdot}8 \times \sec. 9° \times \frac{50}{14{\cdot}25}$	1,090	3,871
72 to 68	5·5 5·0	110	108	5·25	237° 235°	$7\frac{1}{2}°$	14·0 16·5	15·25	$108 \times 5{\cdot}25 \times \sec. 7\frac{1}{2}° \times \frac{50}{15{\cdot}25}$	567	1,875
68 to 73	5 5	176	174	4·75	235° 240°?	8°	16·5 15·0	15·8	$174 \times 4{\cdot}75 \times \sec. 8° \times \frac{50}{15{\cdot}8}$	827	2,641
73 to 74	5 5	210	208	5	240°? 225°	..	15·0 15·2	15·1	$208 \times 5 \times \frac{50}{15{\cdot}1}$	1,040	3,444
74 to 75	5 3·5	220	218	4·25	225° 227°	$2\frac{1}{2}°$	15·2 16·0	15·6	$218 \times 4{\cdot}25 \times \sec. 2\frac{1}{2}° \times \frac{50}{15{\cdot}6}$	927	2,972
75 to left bank	3·5 0	155	153	3·0	227°	..	16·0	20·0	$153 \times 3{\cdot}0 \times \frac{50}{20}$	459	1,148
		Width of water 2790 feet.			Mean velocity = 4 ft. per second.				Totals,	16,396	66,251

For Discharge at ordinary High Flood add to the measured Discharge :—

width of portion in Feet.		depth.		velocity.		cubic ft. per second.
688	×	13	×	7	=	62,608
1,374	×	13	×	6	=	107,172
600	×	13	×	6	=	46,800
155	×	13	×	5	=	10,075
				Total,		226,655
				The measured Discharge,	=	66,251
				Total Discharge at ordinary high floods,	=	293,000
				From this subtract flood discharge of Tengapáni and Noa Dihing Rivers, ...	=	53,000
				Flood discharge of Brahmaputra + Digáru rivers, ...	=	240,000
				Area of Flood section over measured section, ...	=	36,721 S. Ft.
				Add measured section, ...	=	16,396
				Area of Flood section, ...	=	53,017 S. Ft. The mean velocity of Flood = 5·5 ft. per second.
				Measured Discharge, ...	=	66,251
				Subtract volume of 3 ft. rise, ...	=	32,419
				Discharge of the Brahmaputra + Digáru + Noa Dihing + Tengapáni Rivers at their minimum level, ...	=	33,832 The sectional area = 8,228 S. Ft. and mean velocity 4·1 ft. per second.
				Subtract Noa Dihing + Tengapáni, their minimum discharge, ...	=	3,000
						30,800 Cubic feet is the minimum Discharge of Brahmaputra + Digáru rivers.

October, 1878.

H. J. Harman, Lt. R. E.,
Survey of India.

At time of measurement the river was 3 ft. above minimum level of the year, the increase in volume due to this rise is

105	×	3	×	5	=	1,575
143	×	3	×	5	=	2,145
285	×	3	×	5	=	4,275
150	×	3	×	5	=	2,250
140	×	3	×	4	=	1,680
240	×	3	×	3	=	2,160
76	×	3	×	4	=	912
227	×	3	×	3	=	2,724
108	×	3	×	4	=	1,296
600	×	3	×	4	=	7,200
						26,217
Add measured volumes of portions of section which are covered by the 3 ft. rise,						1,800 1,148 3,254
Total increase in volume, due to a 3 ft. rise above minimum level						32,419 cubic ft. per second.

III.—Hemiptera *from Upper Tenasserim.*—*By* W. L. Distant. *Communicated by* J. Wood-Mason.

(Received 22nd Feb. 1879; read 5th March, 1879.)

(With Plate II).

The following paper enumerates and describes the *Hemiptera* collected by Mr. Ossian Limborg in the district east of Moulmein, Tenasserim Provinces, and placed in my hands for determination by Mr. Wood-Mason, to whom the insects belong. So little has yet been done in enumerating the Hemipterous Faunas of the East, and this collection is so limited in extent, that it would be futile to attempt any elaborate scheme of tabulation in illustration of geographical affinities and distribution. The publication, however, of the details of such collections as this from a well specified neighbourhood will afford material for such work hereafter. Many of the species, as might be imagined, are common to Northern India, others range through the whole Eastern Archipelago as far as Celebes.

Heteroptera.

Fam. Pachycoridæ.

Chrysocoris grandis, Thunb.
C. porphyricolus, Walk.
Hotea curculionides, H. S.

Fam. Halydidæ.

Dalpada oculata, Fab.
D. varia, Dall.

Fam. Pentatomidæ.

Antestia anchora, Thunb.
Catacanthus incarnatus, Drury.
Prionaca lata, Dall.
Strachia crucigera, Hahn.

Fam. Edessidæ.

Cyclopelta obscura, St. F. and S.

Fam. Mictidæ.

Dalader acuticosta, A. and S.
Mictis tenebrosa, Fab.
M. gallina, Dall.
Physomelus calcar, Fab.
P. parvulus, Dall.

Fam. Homœoceridæ.

Homœocerus javanicus, Dall.
H. marginellus, H. S.

Fam. Anisoscelidæ.

Serinetha augur, Fab.
S. abdominalis, Fab.

Fam. Alydidæ.

Riptortus pedestris, Fab.

Fam. Coreidæ.

Acanthocoris scabrator, Fab.

Fam. Pyrrhocoridæ.

Lohita grandis, Gray.
Iphita limbata, Stäl.
Physopelta gutta, Burm.
Antilochus russus, Stäl.
A. coquebertii, Fab.
Odontopus nigricornis, Stäl.
Dindymus rubiginosus, Fab.
Dyodercus cingulatus, Fab.

Fam. Reduviidæ.

Euagoras plagiatus, Burm.
Velinus malayus, Stäl.
Reduvius mendicus, Stäl, var.
Vesbius sanguinosus, Stäl.

Fam. Aradidæ.

Brachyrhynchus membranaceus, Fab.

Fam. Acanthaspididæ.

Tiarodes versicolor, Lap.
Sminthus marginellus, n. sp.
Velitra rubro-picta, A. and S.

Fam. Gerridæ.

Ptilomera laticauda, Hard.
Limnogonus, sp. ?

Fam. Belostomidæ.

Belostoma indica, St. F. and S.

Homoptera.

Fam. Cicadidæ.

Platypleura nobilis, Germ.
P. insignis, n. sp.
Huechys sanguinea, De Géer.
H. philæmata, Fab.
H. thoracica, n. sp.
Scieroptera splendidula, Fab.
Dundubia mannifera, Linn.
D. intemerata, Walk.
Pomponia tigroides, Walk. var.
P. sp. ?
Cryptotympana recta, Walk.

Fam. Cercopidæ.

Cosmoscarta tricolor, St. F. and S. var.
C. megamera, Butl.
C. masoni, Dist.

Fam. Centrotidæ.

Centrotypus assamensis, Fairm.

Fam. Iassidæ.

Tettigonia ferruginea, Fab.

Fam. Eurybrachydidæ.

Eurybrachys (?) punctifera, Walk.
Ancyra appendiculata, White.

Fam. Ricaniidæ.

Ricania guttigera, Walk.

Fam. Flatidæ.

Cerynia maria, White. var. *tenella*, Walk.

Notes and Descriptions.

Chrysocoris porphyricolus, Walk.

Call. porphyricola, Walk., Cat. Het., Part. I, p. 29, (1867).

Walker describes this form as being allied to *C. stockerus*, Linn. On the contrary it is very closely allied to *C. purpureus*, Hope, if not even a variety of that species.

Sminthus marginellus, n. sp. Pl. II, Fig. 1.

Sanguineous; head, elytra, lateral borders of sternum and abdomen beneath, and anal abdominal segment black. Antennæ obscure, testaceous; a sanguineous spot behind each eye and base of coriaceous portion of the elytra narrowly of the same colour.

Allied to *S. fuscipennis*, Stäl, from which it differs by the very much more robustly developed eyes and *the narrower space between them;* the head is also slightly more elongated, and the sculpture of the posterior lobe

of the pronotum is different. The colour of the head, extent of the basal coriaceous patch and the colour beneath also differentiates it.

Long. 18 mill.

PLATYPLEURA INSIGNIS, n. sp. Pl. II, Fig. 2.

Body testaceous, thickly covered with griseous pubescence, Pronotum, mesonotum and metanotum not differing in structure and markings from *P. nobilis*, Germ., but more pubescent; pectus, abdomen above and below also resembling that species. Rostrum with the tip pitchy, reaching a little beyond posterior coxæ. Legs pale ochraceous, fore and intermediate tarsi with the base, apex, and claws pitchy.

Tegmina pale hyaline, with the veins, membrana costæ, area costalis, area radialis (excepting almost apical half) and a large basal patch transversely terminated from near the apex of the lower side of the area radialis and the inner border of tegmina at apex of the lower of the areæ ulnares, fulvous covered with griseous pubescence. The area radialis is transparent hyaline from about its middle (where it is darker in colour) to near the apex, which is narrowly fulvous and has a subconical fuscous spot on its outer border. A row of small spots on outer margin of the areæ apicales, situated one on each side of the veins, a submarginal waved row of larger spots situated in like manner, and an irregular series of similar sized spots situated on the bases of the areæ apicales and apices of the areæ ulnares, black. The veins in some places are greenish. Wings pale hyaline, with the veins fulvous and a large black basal patch.

♂. Long. ex. tegm. 15 mill.; exp. tegm. 45 mill.

Allied to *P. nobilis*, Germ., but tegmina and wings very distinct, the opaque portion being much less than in that species. The rostrum is shorter in length and the drums do not overlap each other so much as in *P. nobilis*.

HUECHYS THORACICA, n. sp. Pl. II, Fig. 3.

Black, pilose; pile griseous. Face sanguineous with a large triangular sub-basal black spot, transversely strigose and with a deep, central longitudinal impression. Antennæ testaceous with the basal joint black; eyes testaceous, more or less streaked with black (black in a second specimen I have seen). Ocelli, a triangular patch at base of head, the apex of which is situated between the ocelli, a central longitudinal hour-glass shaped fascia extending through whole length of pronotum, abdomen and three large spots on mesonotum, two lateral and one central, sanguineous. Pectus sanguineous with some frontal black markings. Rostrum and legs, black pilose. Tegmina opaque ochreous brown. Wings pale fuliginous hyaline with the nervures dark fuscous.

The rostrum reaches the apex of the intermediate coxæ.

♀. Long. ex. tegm. 19 mill.; exp. tegm. 43 mill.

Two other unnamed specimens of this species are in the British Museum from Hindustan.

POMPONIA, sp.?

Owing to the number of insects described under the Genus *Dundubia*, frequently only one sex being known, I have considered it better to avoid describing this form until the other and allied genera are structurally monographed.

CRYPTOTYMPANA RECTA, Walk. Pl II, Fig. 4.

Fidicina recta, Walk. Cat. Hom. I, p. 79, 1850.

Walker's type is a ♀, and I have therefore figured the underside of a ♂ in the collection, which seems to belong to this species. It is much paler in colouration above, being more olivaceous than black, but to this I attach no importance, nor do I to its smaller size. All the other characters agree The drums are olivaceous inwardly, broadly margined with black.

Long. ex. tegm. 32 mill.; exp. tegm. 95 mill.

COSMOSCARTA TRICOLOR, St. F. and Serv. Pl. II, Fig. 5.

Cercopis tricolor, St. F. and S. Enc. Méth. X, p. 604, 1827.

This only differs from the typical form in having the sub-basal fascia represented by a transverse waved series of four sanguineous spots; there is also a spot of the same colour at base. It is thus intermediate between *C. tricolor* and *C. basinotata*, Butl. with the last of which, before expanding the tegmina, I confused it. Butler's form differs also in the colouration of the abdomen. I have called this form a variety of *C. tricolor*, though the term "local race" would be more correct. The difference is certainly not "specific," using that definition in the ordinary sense.

COSMOSCARTA MASONI, Dist. Pl. II, Fig. 6.

C. Masoni, Distant, J. A. S. B., 1878, Vol. XLVII, Pt. 2, p. 194.

Pronotum stramineous, with a quadrate black spot on anterior margin; head luteous; tegmina, pectus, legs and abdomen shining black. Prosternum with lateral borders stramineous.

Face robustly tumid, transversely strigose, with a central impunctate longitudinal impression; eyes prominent, luteous; ocelli distinct, shining, situated at about an equal distance from each other as from eyes; basal portion of the head somewhat pitchy. Pronotum thickly and finely punctured, with the lateral margins dilated and strongly reflexed, the lateral angles produced prominently outwards, and the posterior margin rounded, the disc is prominently raised and convex, across the centre of which is a faint impunctate central longitudinal line. The frontal quadrate black patch contains a deep, angular, linear impression on each side behind the eyes, and two small rounded impressions on the posterior border.



Robert H.F. Rippon, del. et lith.

Hanhart imp

TENASSERIM HEMIPTERA.

Tegmina obscurely and finely punctured; wings dark fuscous with the nervures black. Hind tibiæ with a small spine towards apex.

♀. Long. ex. tegm. 17 mill. Exp. tegm. 45 mill.
Greatest long. pronot. 7½ mill. Exp. lat. ang. pronot. 11 mill.

Habitat, Taoo, Tenasserim. Alt. 3—5000 ft.

Explanation of Plate II.

Fig. 1. *Sminthus marginellus*, Dist.
„ 2. *Platypleura insignis*, Dist.
„ 3. *Huechys thoracica*, Dist.
„ 4. *Cryptotympana recta*, Walk.
„ 5. *Cosmoscarta tricolor*, St. F. and S. var.
„ 6. „ *masoni*, Dist.

IV.—*On the Diurnal Variation of Rainfall Frequency at Calcutta.*—By Henry F. Blanford, F. G. S., F. Z. S., F. M. S.

(With Plate III.)

[The greater part of the following paper was written some months since in France, and laid before the Society at its meeting in November 1878. In the original paper, the registers of only six years were discussed; but inasmuch as those for twenty years are available in the Meteorological Office, on my return to India, with the permission of the Council, I have withdrawn and recast the paper, including in the data the whole of the existing registers. As might have been anticipated, the inclusion of a period more than three times as long as that originally treated of, has had the result of clearing away some irregularities, and of bringing out more distinctly the true character of the variation; some of the minor features of which were but doubtfully indicated in the original restricted table; while the more prominent features have been confirmed and emphasised. With a view to their more ready appreciation, a plate has been added, which will enable the reader to compare the diurnal variation of rain frequency at different seasons, with the normal diurnal variations of pressure, temperature, relative humidity and vapour tension at Calcutta. H. F. B.]

The tables here summarised are based on the hourly observations recorded at the Surveyor General's Office from August 1856, to March 1877*; during the greater part of the period on the autographic traces of an Osler's anemometer. The form of the reduction does not show the quantity of the rainfall, but only the fact of its occurrence at the several hours specified; in other words, its comparative frequency; and it is possible that the two kinds of variation may not strictly coincide. The traces in question have not yet been reduced for quantity, otherwise than for the total diurnal fall; but the laws of diurnal variation in point of frequency are so salient and decided, that it is hardly likely that any conclusions to which they may lead,

* As published in the Society's Journal.

bearing on the causes that determine precipitation will require serious modification, when the quantity of precipitation is also taken into account. This investigation, I hope to enter upon when the completion of other more pressing matters shall allow of my taking up the enquiry. Meanwhile, the present will, I think, be found a not unimportant contribution to Meteorological Science.

Table showing the Number of Hours in which rain was recorded during 21 *years at Calcutta.*

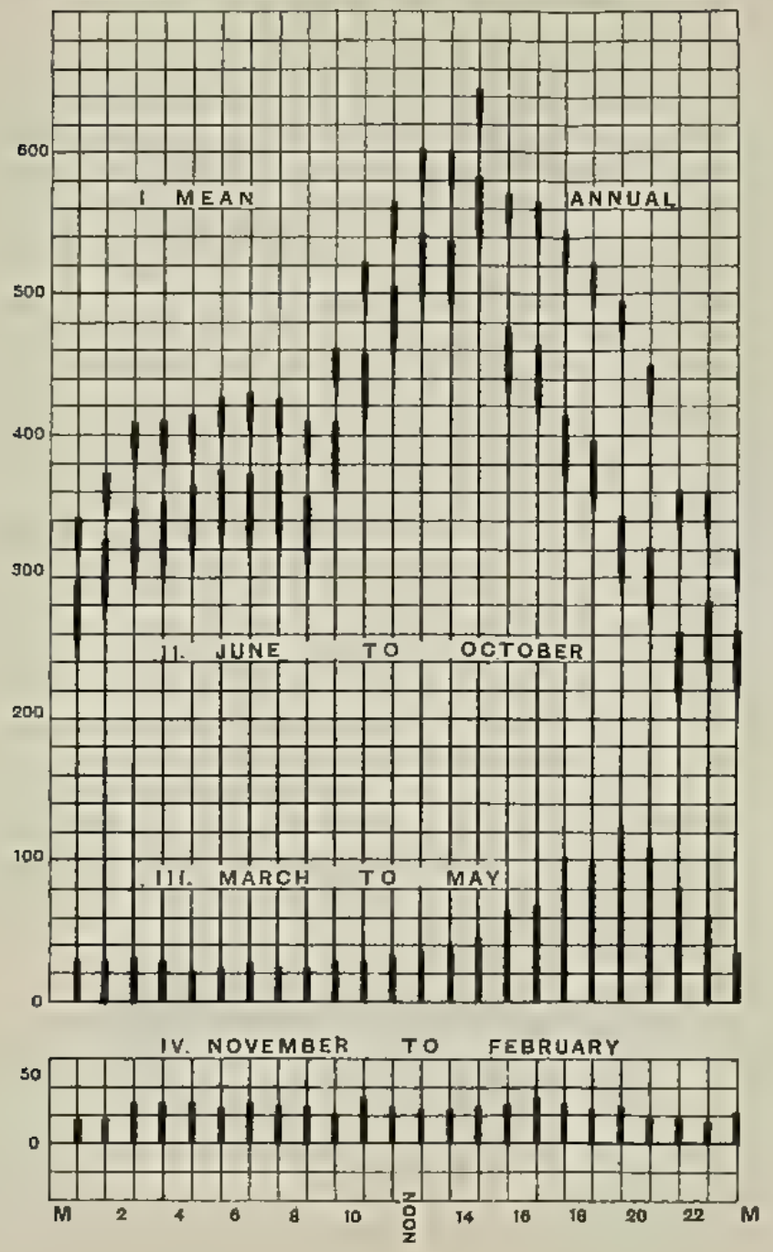
HOURS A. M.

	Midn. to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to Noon.	Midn. to Noon.
January,	3	3	5	8	9	8	8	7	8	8	11	10	88
February,	9	9	14	10	11	7	9	12	9	6	13	6	115
March,	7	9	11	8	4	5	7	9	9	11	6	8	94
April,	9	6	7	8	5	5	7	5	5	6	5	5	73
May,	12	14	14	12	12	14	14	11	10	13	18	20	164
June,	65	68	64	55	70	70	73	75	63	81	88	95	867
July,	80	92	94	88	82	95	88	97	102	114	121	135	1188
August,	97	94	94	112	107	109	105	102	103	107	124	133	1287
September,	36	47	65	64	68	57	65	55	48	72	83	86	746
October,	20	26	31	34	37	45	42	44	41	36	42	56	454
November,	2	3	6	8	6	8	8	8	8	6	10	9	82
December,	3	3	4	3	3	3	4	1	3	1	1	2	31
Yearly Total,	343	374	409	410	414	426	430	426	409	461	522	565	3189

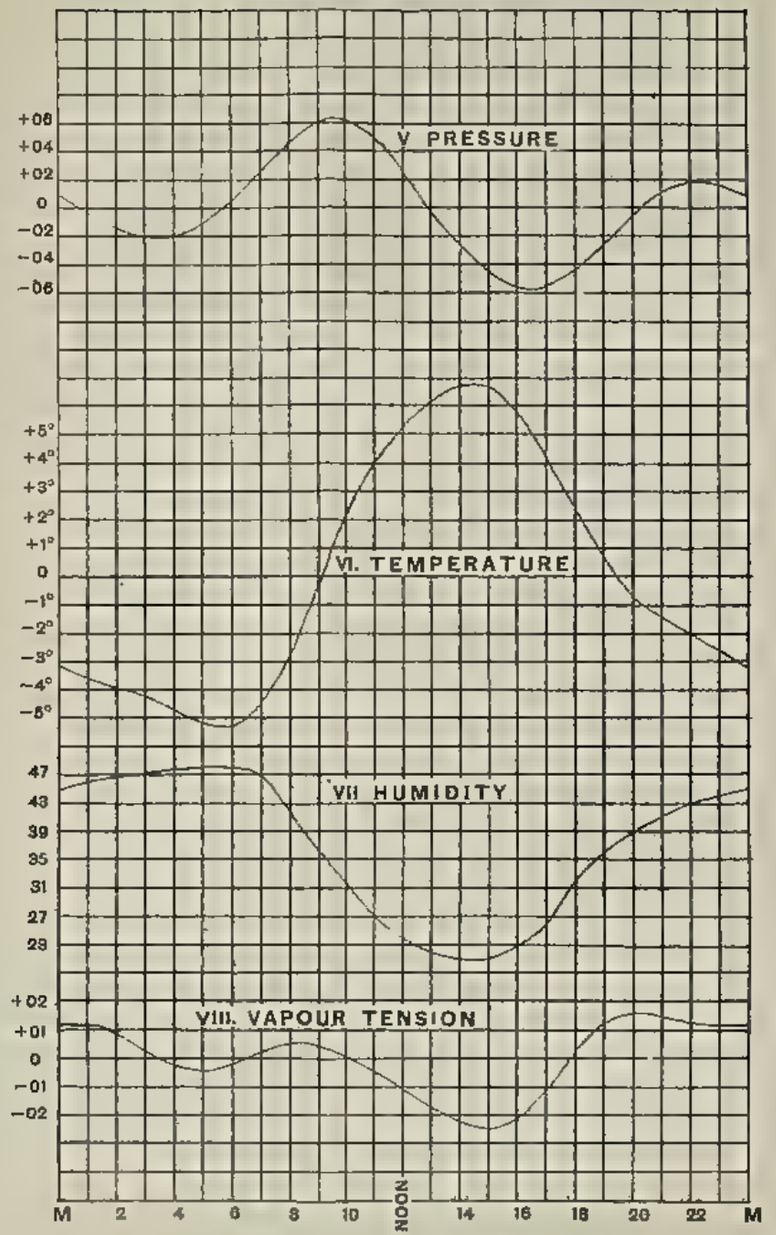
HOURS P. M.

	Noon to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21	21 to 22	22 to 23	23 to Midn.	Noon to Midn.
January,	5	5	6	6	11	9	6	4	5	5	4	6	72
February,	7	9	7	13	9	9	10	13	8	10	9	8	112
March,	6	7	9	18	18	23	23	28	22	14	12	9	184
April,	7	5	11	25	25	26	24	33	30	23	11	9	229
May,	23	26	27	23	31	53	52	64	57	44	38	16	454
June,	101	89	96	74	83	86	88	86	85	67	66	59	980
July,	152	150	140	119	118	103	100	93	85	56	65	60	1241
August,	126	140	142	119	109	112	91	70	71	77	81	84	1222
September,	107	103	130	116	107	80	80	64	49	36	44	35	951
October,	57	55	64	49	47	32	38	30	31	25	26	25	479
November,	11	10	11	7	8	9	7	7	4	4	4	6	88
December,	1	1	3	2	5	2	2	3	2	0	0	2	23
Yearly Total,	603	600	646	571	566	544	521	495	449	361	360	319	6035

DIURNAL VARIATION OF RAIN FREQUENCY.



DIURNAL VARIATION



Photozincographed at the Surveyor General's Office Calcutta

From this table, the following conclusions may be drawn. On the average of the year, which average is mainly determined by that of the summer monsoon months, the hour at which rain is least frequent is shortly before midnight, and that at which it is most so, from 2 to 3 P. M. The latter accords approximately with the diurnal epoch of maximum temperature [see Plate III, fig. 6], but the former does not accord with its minimum; and, indeed, the frequency of rain at the hour of mean minimum temperature is nearly 40 per cent. greater than at midnight, while at the hour of its maximum it is only twice as great; and it would rather appear that while the greatest heat coincides with a principal maximum of rainfall, the greatest cold coincides with a secondary maximum. The course of variation as shewn by the table and by fig. 1 of the plate is somewhat as follows:

For about three hours after midnight, the frequency of rainfall increases rapidly, but after 3 A. M. more slowly, till about sunrise; after which there is a slight falling off to a secondary minimum at 9 A. M. This is very distinctly shown in the present table: in that originally drawn up it was less clearly indicated. After 9 A M. the frequency increases rapidly to the absolute maximum between 2 and 3 P. M. From this maximum it declines, without interruption, to the minimum before midnight. The total number of rainy hours from midnight to noon is 46 per cent. of the whole; and between noon and midnight 54 per cent. On the other hand, in the day time (6 A. M. to 6 P. M.), the proportion is 57 per cent., and 43 per cent. in the night hours.

The character of the variation in the rainy months of the summer monsoon does not differ materially from the above. But that of the hot season is very different; and that of the cold season again differs from both and is more uniform than either. The following table and figs. 2, 3 and 4 in the Plate exhibit the data thus arranged according to the three seasons.

	Hours A. M.											
	Midn. to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to Noon.
Rains: June to October,	298	327	348	353	364	376	373	373	357	410	458	505
Hot season: March to May, ...	28	29	32	28	21	24	28	25	24	30	29	33
Cold season: November to February, ...	17	18	29	29	29	26	29	28	28	21	34	27

	Hours p. m.											
	Noon to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21	21 to 22	22 to 23	23 to Midn.
Rains : June to October,	543	537	572	477	464	413	397	343	321	261	282	263
Hot season : March to May,	36	38	47	66	69	102	99	125	109	81	61	34
Cold season : November to February,	24	25	27	28	33	29	25	27	19	19	17	22

The variation in the rainy months is, then, almost identical with that above described, the chief difference being that after the afternoon maximum, the decline is more rapid. The heavy rains of the monsoon months are, then, more particularly rains of the day time, favoured and accelerated by the diurnal rise of temperature, and declining with the decline of the sun's heat. In a nearly saturated atmosphere, the rapidity with which vapour ascends from lower to higher levels, and eventually becomes dynamically cooled and condensed, depends on the temperature, increasing indeed as the square of the absolute temperature. The relative humidity of the lower atmosphere (as tested in our observations), does not follow the same course of variation. Indeed, as may be seen in fig. 7, this course is exactly the inverse of that of temperature, but as far as can be judged from casual observation, the formation and dispersion of *cumulus* cloud, indicating the state of saturation at heights of from 2000 to 7000 or 8000 feet, is equally determined by the rise and fall of the temperature, and in its mode of formation the rain-cloud of the summer monsoon is essentially *cumulus*. The hour of least frequent rainfall, which in the summer monsoon would seem to be between 10 and 11 p. m., is probably also that of least cloudiness. The horary variation of cloud is not known for Calcutta, but I found some time since on examining the registers of a number of Bengal stations, at which the cloud proportion had been recorded for some years at 4 and 10 a. m. and p. m. that the average at 10 p. m. was very considerably below that observed at other hours. Kreil has noticed a similar fact at Vienna, and Neumayer in his discussion of the Observations of the Flag-Staff Observatory at Melbourne, also finds that, on the average of the year, there is a strongly marked minimum about this hour. Kreil explains this tendency to the dispersion of cloud, after sunset, by the compression which the lower atmospheric strata undergo, in consequence of the general contraction and subsidence of the mass; to which action he also refers the coincident baro-

metric rise and maximum. In any case, this coincidence of minimum raininess, minimum cloudiness and the semi-diurnal maximum of pressure, is an important fact of observation.

The rapid rise of rain-frequency after midnight corresponds, though less exactly, to the nocturnal fall of pressure ; but, as on the average of the year, the secondary maximum is not reached till some time after sunrise, *viz.*, about 6 A. M. In the Melbourne curve of cloud variation, this is also about the epoch of the diurnal maximum, and as already remarked it is that of minimum temperature and maximum humidity at the ground surface. The slight fall that ensues continues till between 8 and 9, which is about an hour in advance of the epoch of maximum pressure. It would seem therefore that the tendency to the precipitation of rain is a somewhat complex function of the temperature and pressure variations ; or inasmuch as the latter is an effect of the former, of the temperature variation producing two conditions which are in part mutually antagonistic in their effect on the rainfall. To sum up the results of this discussion, I would suggest the following as a possible explanation of the rainfall variation. The cooling of the atmosphere after 3 P. M. in the first place checks the production and ascent of vapour, as well as of convective atmospheric currents, and (adopting Kreil's explanation of the barometric tides) causes a rise of pressure in the lower atmosphere as a consequence of the sinking and compression of the atmospheric mass. These effects bring about a dispersion of cloud and a fall of rainfall frequency from the absolute maximum to the absolute minimum of the 24 hours. About 10 P. M. the compression having reached its maximum, re-expansion sets in, and, in conjunction with continued cooling, raises the relative humidity of the cloud-forming strata, and consequently the tendency to the formation of cloud and rain. When the re-expansion ceases about 3 or 4 A. M., the loss of heat is still operative in the same direction, though less powerfully ; but, after sunrise, the direct effect of the solar heat is to diminish cloud and rainfall, while raising the pressure of the lower atmosphere ; and it is not until this increasing pressure has nearly attained its maximum, and the ascent of vapour has become sufficiently active to prevail over these first effects, that the formation of cloud* and rainfall proceed actively, and attain their afternoon maximum ; this condition coinciding with the highest temperature and the greatest activity of diffusing vapour and convective currents.

This explanation, I must remark, is suggested solely by a consideration of the several coincident phenomena, and presupposes an atmosphere highly charged with vapour, such as is that of the summer monsoon. It would be impossible to predict the course of the changes *a priori*, because the several

* This is of course an assumption as regards the cloud maximum.

actions being to a certain extent mutually antagonistic in their effects on the formation of rain, it would be impossible to foretell, in the absence of direct observations made in the cloud-forming strata, when and how these effects would mutually balance, and in what measure and at what epochs one or the other would become predominant.

In the dry and hot season the diurnal course of rainfall variation is very different from the above. The diurnal epoch of minimum is not very distinctly indicated, but would appear to fall about sunrise. There is, however, but little variation from midnight up to 9 or 10 A. M. ; and after this only a slow rise up to 2 P. M., when the increase becomes more rapid. About two hours before sunset there is a sudden rise of about 50 per cent., and the hour of maximum raininess occurs between 7 and 8 P. M., the number of recorded falls being then six times as great as at sunrise. This very striking feature of the hot season is due to the well-known evening storms, commonly called *North-Westers*, which are closely analogous to the thunderstorms of the European summer ; and, whether as rain or hail-storms or simply as dust-storms, are characteristic of the dry season more or less in all parts of India. In Lower Bengal they are especially frequent, and the favouring conditions appear to be, the presence of a certain moderate supply of vapour brought by the coast winds, a high temperature at and near the ground surface, and a dry westerly wind from the interior of the country, which in Lower Bengal blows chiefly as an upper current from the plateau of Western Bengal, but during the hottest hours of the day, when it is at its greatest strength, produces a marked effect on the mean wind direction at Calcutta, and is sometimes felt there directly as a hot surface wind. It is when this wind slackens towards sunset, and that from the direction of the coast gains in prevalence, producing a calm in the interval, that North-Westers chiefly occur. They receive their name from the fact that the storm-cloud most commonly originates in the North-West, and advances or rather forms up with great rapidity from that direction, the formation of the nimbus overhead being speedily followed by violent gusts of wind from the same direction, which raise clouds of dust and occasionally exert pressures comparable with those of a cyclone. Immediately before the onset of the storm, the barometer rises rapidly, sometimes more than 0·1 inch ; and, as Mr. Eliot has shown from a study of the autographic records of the Alipore Observatory, the subsequent fall coincides with the onset of the stormy winds, and a great and sudden fall of temperature and vapour pressure. Frequent casual observations of the motion of the dust and cloud margin in advance of these storms, have led me to conclude that the stormy wind which blows out from under the storm-cloud is a great horizontal eddy, the impulse of which is furnished by the air dragged down,

partly by the friction of the rain. But this is not invariably the case; as I have more than once experienced a gusty though less violent wind, when no rain was falling. The only essential feature, which is apparently common to all storms of this class, including the dry and rainless dust-storms of the Punjab and hail-storms, is a more or less spasmodic and sudden subversion of vertical equilibrium, and rapid convection accompanied by eddying currents, and generally, in Bengal, at least, by heavy rain. It is somewhat remarkable that their most frequent occurrence coincides with the most rapid cooling of the atmosphere, but it must be observed that as a general, if not invariable, rule the cloud canopy in which the storm originates has been formed during the day, and that this shields the subjacent air and earth surface from rapid cooling, while the higher strata are radiating freely into space.

Lastly, in the cold season, falls of rain are distributed pretty evenly throughout the day, with a decided diminution during the two or three hours before and after midnight; as shown in the table, from 8 P. M. to 2 A. M. This period corresponds with that of the strongly marked minimum of the rainy season; and may probably be referred to similar causes; the atmosphere of the cold weather being normally of higher humidity than that of the hot season, and especially when a southerly wind sets in, which is always the precursor of rain.

The general conclusion to be drawn from this discussion is, that the conditions which promote and determine precipitation, are different at different seasons. In the highly vapour-charged atmosphere of the rainy monsoon, and in a much less degree in the cold season, condensation is most promoted by increasing temperature, and the more active ascent of vapour determined thereby. In a minor degree, the opposite action, *viz.*, nocturnal cooling, under certain conditions, produces the same effect, but this is complicated with those of the internal movements (the compression and expansion) of the atmosphere, which are another effect of the oscillation of temperature. In the comparatively dry atmosphere of the hot weather, the precipitation is chiefly that of storms, which are spasmodic movements, arising from the subverted equilibrium of the superimposed strata; and these are most frequent when the atmosphere as a whole is cooling most rapidly. They are probably the effect of unequal cooling.

V.—*Record of the Occurrence of Earthquakes in Assam during*

Date.	District.	Time of occurrence.	Duration.
19th Jan. 1878.	Darrang, Tezpur.	12.50 A. M.	From 8 to 12 seconds.
Ascertained that this shock was not felt in the following districts: Cachar, Goalpára and			
3rd Feb. 1878.	Darrang, Tezpur.	11.52 P. M.	5 to 8 seconds.
Ascertained that this shock was not felt in the following districts: Cachar, Lakhimpur and			
5th Feb. 1878.	Darrang, Tezpur.	1 P. M.	Each shock from 10 to 15 seconds.
Do.	Do.	7.15 P. M.	
Do.	Do.	10.40 P. M.	
Do.	Goalpára.	7.10 P. M.	About 30 or 35 seconds.
Do.	Do.	11.30 P. M.	About 40 seconds.
Do.	Shillong, (Khási and Jaintea Hills).	7.18 P. M.	About 10 seconds.
Do.	Do.	10.30 P. M.	Do.
Do.	Gauháti, (Kamrúp).	7.15 P. M.	5 seconds.
Do.	Do.	10.45 P. M. or there abouts.	3 seconds.
Do.	Turá (Gáro Hills).	7.30 P. M.	About 20 seconds.
Do.	Do.	10.15 P. M.	About 10 seconds.
Do.	Barpeta (Kamrúp).	7.30 P. M.	Not given.
Do.	Do.	11 P. M.	Do.
Do.	(Goalpára), Dhúbri.	7.30 P. M.	About 5 seconds.
Do.	Do.	10.40 P. M.	About 3 seconds.
Do.	Nowgong.	7.30 P. M.	About 10 seconds.
Do.	Do.	10.5 P. M.	About 5 seconds.
Do.	Cachar.	7.50 P. M.	About 2 seconds.
Do.	Do.	11·50 P. M.	About 1 second.

N. B. It was not felt in the Nága Hills, Lakhimpur and Sibságar

1878.—*Communicated by the* Chief Commissioner of Assam.

Apparent direction.	Extent of damage, if any, and general Remarks.
Not noticed.	A smart shock; preceded by the usual rumbling noise. No damage done.
Sylhet, Nowgong, Khási Hills, Gáro Hills, Lakhimpur, Sibságar, Nága Hills, Kamrúp.	
N. Westerly direction.	The rumbling noise that preceded the shock was very loud and distinct. The shock itself, slight. No damage done.
Sylhet, Nowgong, Khási Hills, Gáro Hills. Sibságar.	
Not noticed.	No damage done. The shocks were slight but the rumblings that preceded each shock were unusually loud and prolonged.
S. to N.	The second was somewhat heavier than the first. No damage done.
Do.	
W. to E.	No damage done. Both smart shocks.
Do.	
W. to E.	There were two sharp shocks but no damage done.
Do.	One shock. No damage done.
W. to E.	No damage done.
W. to E.	No damage done.
N. to E.	
Not stated.	
N. E. to S. W.	Two smart shocks were felt.
Do.	Only one shock, which passed very soon.
N. W. to S. E.	One sharp shock. No damage.
Do.	No damage.
N. to S.	A slight shock.
Do.	A very slight shock.
Districts.	It was felt in Sylhet, necessary particulars were not noted.

Date.	District.	Time of occurrence.	Duration.
25th Feb. 1878.	Nowgong.	7.30 P. M.	3 seconds.
Do.	Shillong, (Khási Hills).	8.20 P. M.	3 seconds.
Do.	Cachár.	8.30 P. M.	1 second.
Do.	Goalpára.	9 P. M.	1 second.
	Ascertained this shock was not felt in the district of Kamrúp,		
13th April, 1878.	Nowgong.	9.30 P. M.	5 seconds.
Do.	Shillong, (Khási Hills).	10.45 P. M.	5 seconds.
Do.	Gauháti, (Kamrúp).	10.5 P. M.	a few seconds.
Do.	Tezpur, (Darrang).	10.50 P. M.	8 to 10 seconds.
	Ascertained that this shock was not felt in the following districts:		
19th April, 1878.	Jorehát sub-division of Sibságar.	9 P. M.	1 minute.
	Ascertained that this shock was not felt in the following districts: Sylhet, Khási Hills and		
23rd April, 1878.	Jorehat sub-division of Sibsagar.	4.30 P. M.	10 seconds.
	Not felt in the following districts: Sylhet, Cachár, Goalpára, Gáro Hills,		
29th April, 1878.	Samaguting, NágaHills.	1.30 P. M.	5 seconds.
Do.	Nowgong.	2.30 P. M.	5 seconds.
Do.	Shillong, (Khási Hills).	2.37 P. M.	30 seconds.
Do.	Darrang, Camp Urung.	2.40 P. M.	8 to 10 seconds.
Do.	Sibságar, (Head Qrs.)	2.50 P. M.	Less than 1 second.
Do.	Lakhimpur, Dibrughar.	2.51 P. M.	3 to 4 seconds.
Do.	Kamrúp, Gauháti.	3 P. M.	A few seconds.
Do.	Golaghát sub-division of Sibságar.	Noon.	Not noticed.
Do.	Jorehát sub-division of Sibságar.	Not noticed.	10 seconds.
	Ascertained that this shock was not felt in the following		
2nd May, 1878.	Shillong, (Khási Hills).	2.30 A. M.	About 10 seconds.
Do.	Nowgong.	Night.	Not noticed.
	Not felt in the following districts: Sylhet, Cachár, Goalpára, Gáro		
4th May, 1878.	Nowgong.	12 P. M.	About 5 seconds.
Do.	Tezpur, (Darrang).	1 A. M.	12 to 15 seconds.
Do.	Shillong, (Khasi Hills).	2.20 P. M.	3 seconds.
	Ascertained that this shock was not felt in the following districts: Sylhet,		

Apparent direction.	Extent of damage if any and general Remarks.
N. W. to S. E.	No damage.
W. to E.	No damage.
N. W. to S. E.	One smart shock. No damage.
S. to N.	No damage.
Sibságar, Nága Hills, Sylhet, Lakhimpur, Darrang and Gáro Hills.	
N. W. to S. E.	No damage.
W. to E.	Do.
W. to E.	One smart shock. No damage.
Not noticed.	Two distinct and very smart shocks in rapid succession. No damage.
Cachár, Goalpára, Gáro Hills, Sylhet, Sibságar, Nága Hills, and Lakhimpur.	
S. W. to N. E.	No damage.
Cachár, Goalpára, Gáro Hills, Kamrúp, Darrang, Nowgong, Lakhimpur. Nága Hills.	
Not noticed.	No damage.
Kamrúp, Darrang, Nowgong, Lakhimpur, Khási Hills and Nága Hills.	
W. to E.	No damage.
S. to N.	A very slight shock. No damage.
W. to E.	No damage.
Not noticed.	Two very clear smart and distinct shocks felt. They were also felt at Mangaldai. No damage done. The usual rumbling noise did not precede these shocks.
N. to S.	No damage.
N. to E.	No damage. Slight shock ; weather rather sultry.
W. to E.	A slight shock. No damage.
E. to N.	No damage.
Not noticed.	No damage.
districts : Sylhet, Cachár, Goalpára and Gáro Hills.	
S. to N.	No damage.
Not noticed.	Do.
Hills, Kámrúp, Darrang, Sibságar, Lakhimpur and Nága Hills.	
N. W. to S. E.	No damage.
S. E. to N. W.	Two very smart shocks preceded by the usual rumbling noise ; no damage.
S. to N.	No damage.
Cachár, Goalpára, Gáro Hills, Kamrúp, Sibsagar, Lakhimpur and Nága Hills.	

Date.	District.	Time of occurrence.	Duration.
13th May, 1878.	Shillong, (Khási Hills).	10 A. M.	4 seconds.
Not felt in the following districts: Sylhet, Cachár, Goalpára, Gáro Hills,			
30th May, 1878.	Shillong, (Khási Hills).	10 P. M.	About 5 seconds.
Not felt in the following districts: Sylhet, Cachár, Goalpára, Gáro Hills,			
2nd June, 1878.	Shillong, (Khási Hills).	10.25 P. M.	About 5 seconds.
Not felt in the following districts: Sylhet, Cachár, Goalpára, Gáro Hills,			
1st July, 1878.	Shillong, (Khási Hills).	4 P. M.	About 10 seconds.
No report from other districts; apparently			
2nd July, 1878.	Tezpur, (Darrang).	6.15 A. M.	5 seconds.
Do.	Gauháti (Kámrúp).	6.26 A. M.	6 seconds.
Do.	Sibságar, (Sibságar.)	6.4 A. M.	3 seconds.
Do.	Jorehát, (Sibságar.)	7 A. M.	20 seconds.
Do.	Nowgong.	6 P. M.	5 seconds.
Do.	Samagúting, (Nágá Hills).	6.10 P. M.	10 seconds.
Ascertained that the shock was not felt in Lakhimpur,			
5th July, 1878.	Shillong, (Khási Hills).	8.20 A. M.	About 5 seconds.
Do.	Tezpur, (Darrang).	8.20 A. M.	A few seconds.
Do.	Gauháti, (Kámrúp).	8.33 A. M.	About 20 seconds.
Do.	Nowgong.	About 8 P. M.	About 2 seconds.
Not felt in Goalpára, Gáro Hills, Sylhet,			
31st July, 1878.	Shillong, (Khási Hills).	10.20 A. M.	A second or two.
Ascertained that the shock was not felt in Goalpára, Kámrúp, Nowgong,			

Apparent direction.	Extent of damage if any and general Remarks.
S. to N.	No damage.
Kámrúp, Darrang, Nowgong, Sibságar, Lakhimpur and Nága Hills.	
N. to S.	No damage.
Kámrúp, Darrang, Nowgong, Sibságar, Lakhimpur and Nága Hills.	
N. to S.	Very slight shock. No damage.
Kámrúp, Darrang, Nowgong, Sibságar, Lakhimpur and Nága Hills.	
S. to N.	No damage done.
not felt anywhere in the Province.	
N. W. to S. E.	No damage, two successive shocks perceptible, but both slight.
N. E. to S. E.	No damage done.
Not known.	No damage.
E. to W.	No damage.
N. W. to S. E.	No damage done.
E. to W.	No damage.
Gáro Hills, Cachár, Sylhet, and Khási Hills.	
W. to E.	No damage done.
Not observed.	No damage, three distinct shocks. The centre one most severe, loud rumbling noise preceded the shocks.
N. E. to S. W.	One smart shock. No damage to property.
N. E. to S. W.	A very slight shock. No damage done.
Cachár, Lakhimpur, Sibságar and Nága Hills.	
S. W. to N. E.	No damage done.
Darrang, Sibságar, Lakhimpur, Gáro Hills, Nága Hills, Sylhet and Cachár.	

Date.	District.	Time of occurrence.	Duration.
4th Augt. 1878.	Tezpur, (Darrang).	8 A. M.	2 seconds.
			No reports received from
30th Augt. 1878.	Tezpur, (Darrang).	6.8 P. M.	A few seconds.
			No reports received
3rd Oct. 1878.	Jorehát, Sibságar.	About 2 P. M.	About ½ a minute.
			Not felt in
13th Nov. 1878.	Shillong, (Khási Hills).	4.30 A. M.	About 5 seconds.
Do.	Nowgong.	About 4.30 A. M.	About 3 seconds.
Do.	Gauháti, (Kámrúp).	About 5 A. M.	4 to 5 seconds.
Do.	Sylhet.	5.30 A. M.	2 seconds.
Do.	Tezpur, (Darrang).	5.30 A. M.	A few seconds.
		Ascertained that this shock was not felt at Goalpára,	
14th Nov. 1878.	Shillong, (Khási Hills.)	12.20 A. M.	About 15 seconds.
	Ascertained that the shock was not felt at Goalpára, Kámrúp, Darrang,		
29th Nov. 1878.	Tezpur, (Darrang).	5 A. M.	5 to 8 seconds.
		Not felt at Goalpára, Kámrúp, Nowgong, Sibságar, Lakhimpur,	
1st Dec. 1878.	Shillong, (KhásiHills).	6¼ P. M.	About 5 seconds.
		Not felt at Goalpára, Kámrúp, Darrang, Nowgong, Sibságar,	
8th Dec. 1879.	Shillong,(Khási Hills).	11.30 P. M.	About 5 seconds.
		Not felt in Kámrúp, Darrang, Nowgong, Sibságar, Lakhimpur,	
25th Dec. 1878.	Tezpur, (Darrang).	12.42 P. M.	A few seconds.
		Not felt in Goalpára, Kámrúp, Darrang, Nowgong, Sibságar, Lakhimpur,	

Apparent direction.	Extent of damage if any and general Remarks.
N. to S.	No damage.

the other districts.

From N. E.	Two shocks, preceded and succeeded by a loud rumbling.

from other districts.

W. to E.	Nil.

other districts.

W. to E.	No damage done.
N. W. to S. E.	Do., a very slight shock.
S. E. to N. W.	One shock, no injury done.
E. to W.	No damage.
Not noticed.	Very distinct and marked while it lasted. No damage done.

Sibságar, Lakhimpur, Cachár, Garo Hills and Nága Hills.

N. to S.	No damage done.

Nowgong, Sibságar, Lakhimpur, Cachár, Sylhet, Nága Hills and Gáro Hills.

Not noticed.	No damage done. The actual shock was slight but the rumbling and noise preceding the shock was unusually loud and marked.

Cachár, Sylhet, Naga Hills, Gáro Hills and Khási and Jaintia Hills.

W. to E.	No damage done.

Lakhimpur, Cachár, Sylhet, Gáro Hills and Nága Hills.

S. to N.	No damage done.

Goalpára, Cachár, Sylhet, Gáro Hills and Nága Hills.

Not observable.	A very slight shock.

Cachár, Sylhet, Gáro Hills, Khási and Jaintia Hills and Nága Hills.

VI.—*On some experiments made at H. M.'s Mint in Calcutta on coining Silver into Rupees.*—*By* Col. J. F. Tennant, R. E., F. R. S., &c., *Master of the Mint.*

(Received 22nd March;—Read 2nd April, 1879.)

It has long been known that when an alligation containing fine silver and copper has been melted the result is an apparent refining, and the result of the further processes in coining is also to change the constitution of the alloy. In order, therefore, to produce Rupees of standard weight and fineness, it has always been found necessary to allow for these changes. The rule by which this allowance was made, however, did not seem to me to have any good foundation, and, while generally speaking the results were fair, there were occasional departures which convinced me that it could be improved. The rule here has been to make the alligation to standard $\frac{1}{1}\frac{1}{2}$ of silver: scissel being assumed to have this fineness—then copper was added in proportion to all the silver except scissel, so as to reduce the fineness and this "extra alloy" was subject to variation on different coins.

It was clear then that silver in the form of scissel was not supposed to refine, and next that the whole of the change was not supposed to occur in melting, but partly to depend on the further processes. The last was a matter which was evidently more than probable; and as regards the first Col. J. T. Smith, late Master of this Mint, had many years ago shown that after a time a silver alloy ceased to refine. It seemed to me more than probable that this last result was only an approximation to the truth, and that the fact was that copper when mixed (at all events in small quantities) with silver was not exposed to oxidation in the furnace; but on this hypothesis it became absurd to add extra alloy on silver of 900 milliémes of fineness as on fine bars. I thought too that I saw that the variations which such an error would cause really took place, and resolved therefore to investigate the whole matter experimentally.

Silver at this Mint is reported to 0·2 of a milliéme: when an alligation is made, it is usually arranged that there shall not be a great number of finenesses used, and as each quality will be composed of several samples, these are all mixed in a heap, so that the silver used is the average (roughly) of several samples all reported alike. This procedure generally allows all the pots of a day's melting to be practically identical in fineness and weight, and if this be not the case it is very rarely that there are not several similar pots. There were no cases of single pots in this work, though owing to a small stock of silver, the whole in each melting could not be made alike.

Having the weight and fineness of each sample of silver in a pot, we are in a position to compute its fineness on the supposition that no change takes place in melting: this I call the "*Theoretical Fineness.*" When the contents are melted and well mixed, a small spoonful of the fused alloy is granulated and from this a muster is delivered to the Assay Master: the fineness of this I have called the "*Fineness of Pot,*" it is generally greater than the Theoretical fineness. In the later processes and especially in that of "pickling," preparatory to coining, the fineness is further increased, and the final result is determined from an assay of the coins by taking a proportion of coins for assay singly, and also some for assay after melting them up. This last determination is the least satisfactory; however uniform the melted mixture may be, the alloy is not equally distributed in the resultant ingots and every after process tends to increase this irregularity; so that at last, not only are the various coins different in their fineness, but portions taken from different parts of the same coin are so. I have used as a measure of the fineness of the coins of one day, the mean result derived from 20 single coins—the sample piece being always cut out from the centre of the coin, and I have called the result "*Fineness of Coins.*"

During these experiments 10 pots were daily alligated to the same *Theoretical Fineness*: I have thus had a measure of the accuracy of the Assay Reports, and I have used this for calculating the probable errors of the theoretical finenesses, in a way which (though somewhat arbitrary) seems to me sufficiently accurate for the purpose. When the probable error of an Assay Report is known, it is easy to calculate that of one heap, made of several samples of one quality, on the supposition that the whole is fairly mixed. As, however, the mixture must at best be very imperfect, I have preferred assigning to each quality of silver the same probable error of fineness as though all had depended on a single report.

As any erroneous hypothesis as to the quality of scissel used would clearly have vitiated the results, I had a quantity melted down, assayed, and laminated, each pot being kept separate, and thus I had metal which was of known fineness—save the small change from lamination which would equally be shared by all scissel—but which I conceived would be subject in melting to the same changes as scissel itself.

I had intended to keep the work from each pot separate all through, but after a certain point this was found impracticable, and the coins from a single day's melting have been mixed. After I had completed the greater part of the calculation for this paper, I found that, by a careless blunder, there had been a mixing of the coins of the second and third days' meltings: and though I could only prove that it had been slight, and it probably would not have seriously affected the result, I had the work of those days repeated and I use this repetition, though the results are not nearly so accordant as

those I first had. This is the reason why the melting numbers do not run continuously from 89 to 98; 90 and 91 being omitted and 114 and 115 inserted.

The following table shows the mean results for each day's work with their probable errors; the quantities of scissel and copper used daily are approximately shown. The unit of weight is a tolah of 180 English grains. A pot contains close on 12,500 tolahs, or 4687.5 ounces troy, and the whole quantity of standard silver melted and watched was about 12,45,000 tolahs, or 466,875 ounces troy, or about 14,521 kilograms. What is not accounted for as scissel or copper was refined bar silver of about 997 fine. The scissel was about 916 fine.

Melting No.	Composition.	Fineness in millièmes			Gain in fineness.		
		Theoretical.	of Pots.	of Coins.	Pots — Theory.	Coins — Theory.	Coins — Pots.
97	All scissel, No copper,	915·80 ± 0·078	915·82 ± 0·041	916·34 ± 0·080	0·02 ± 0·088	0·54 ± 0·112	0·52 ± 0·090
98	All scissel, No copper,	915·80 ± 0·058	915·63 ± 0·038	916·35 ± 0·089	—0·17 ± 0·069	0·55 ± 0·106	0·72 ± 0·097
89	9563 scissel, 186 copper,	916·47 ± 0·079	916·83 ± 0·032	917·40 ± 0·086	0·16 ± 0·086	0·73 ± 0·117	0·57 ± 0·092
115	10100 scissel, 189 copper,	916·42 ± 0·049	914·36 ± 0·027	917·30 ± 0·085	—0·06 ± 0·056	0·88 ± 0·098	0·94 ± 0·089
114	7529 scissel, 404 copper,	916·19 ± 0·057	916·75 ± 0·018	917·05 ± 0·078	0·56 ± 0·060	0·86 ± 0·097	0·30 ± 0·080
92	7512 scissel, 407 copper,	916·20 ± 0·069	916·31 ± 0·019	916·89 ± 0·093	0·11 ± 0·072	0·69 ± 0·116	0·58 ± 0·095
93	5002 scissel, 611 copper,	915·96 ± 0·066	916·72 ± 0·022	917·07 ± 0·041	0·76 ± 0·070	1·11 ± 0·078	0·35 ± 0·047
94	5004 scissel, 609 copper,	916·95 ± 0·066	916·80 ± 0·032	917·20 ± 0·077	0·85 ± 0·073	1·25 ± 0·101	0·40 ± 0·083
95	2501 scissel, 826 copper,	915·71 ± 0·074	916·05 ± 0·018	916·87 ± 0·080	0·34 ± 0·076	1·16 ± 0·109	0·82 ± 0·082
96	2523 scissel, 816 copper,	915·72 ± 0·074	916·65 ± 0·029	917·28 ± 0·097	0·93 ± 0·079	1·56 ± 0·122	0·63 ± 0·101

It will be seen that two meltings have been made for each proportion of copper. If C represent roughly one hundred tolas of copper, and we group these determinations in proportion to the quantity of copper, we shall have:

	Gain in		
Copper.	Pots — Theory.	Coins — Theory.	Coins — Pots.
0 C	— 0·075 ± 0·079	+ 0·545 ± 0·109	+ 0·620 ± 0·094
2 C	+ 0·050 ± 0·073	+ 0·805 ± 0·108	+ 0·755 ± 0·091
4 C	+ 0·335 ± 0·065	+ 0·775 ± 0·107	+ 0·440 ± 0·088
6 C	+ 0·805 ± 0·071	+ 1·180 ± 0·090	+ 0·375 ± 0·065
8 C	+ 0·635 ± 0·078	+ 1·360 ± 0·116	+ 0·725 ± 0·092

It is evident that the refining of the Pots from the Theory is nearly proportional to C, and that the refining of the Coins above the Pots or the ingots is approximately constant, though irregular, as indeed might have been anticipated.

If now we assume $a + mx$ to be the refinage in melting, when m is the coefficient of C above, and y to be the refinage in passing from the Ingots to Coin; we shall have

5 values of $a + mx$ of nearly equal weight

5 ——— y of sufficiently equal weight

and 5 values of $a + mx + y$, which being the sums of the others we may neglect.

From these equations we get the following values:

$$a = - 0{\cdot}085 \pm 0{\cdot}088$$
$$x = + 0{\cdot}109 \pm 0{\cdot}018$$
$$y = + 0{\cdot}583 \pm 0{\cdot}051$$

The large probable error of a compared with its value renders it very doubtful if there is any real change in scissel melting. What there is seems to be towards *loss of fineness* and it is quite certain that silver evaporates; for, in the Regenerators and flues of the Gas Furnaces (now disused) the soot was found to contain silver.

The other quantities are clearly marked, and the small probable error of x shows that the hypothesis that free copper only burns is probably true. Had a been assumed $= 0$, the value of x would have been 0·095.

The value of x shows that sufficient copper burns away to raise the fineness by 0·109 millièmes for each 100 tolahs of free copper and this quantity should be added as extra alloy: and the value of y shows that, during the processes of converting ingots into coin, sufficient alloy is removed to make the coins 0·583 of a millième finer on the average than the ingots from which they are made.

Thus in order to have accurate Rupees it would seem necessary that the Calculated or Theoretical fineness of the pots should be

$$916{\cdot}667 + 0{\cdot}085 - 0{\cdot}583 - 0{\cdot}109\ C$$

or $916{\cdot}169 - 0{\cdot}109\ C$.

Now if S be the amount of pure silver in a mass and W be its weight, the fineness $f = \frac{S}{W}$ and $dW = -\frac{W}{f}\,df$.

If in this equation we put W = 12,500, $f = 0{\cdot}916667$ and $df = 0{\cdot}000109$ C, we shall have d W or the additional alloy = 1·48 C.

Practically then to get Rupees of standard fineness we should alligate to 916·169 and then add $1\frac{1}{2}$ per cent. of the free copper.

For smaller coins the increase of fineness will be greater and the alligation will be lower.

When the alloy in the silver is at all volatile or very oxidable the above rule would not serve of course. So far as possible it is sought to guard against this by melting all low-touch or suspicious silver before receipt and heating it strongly; or even, in some cases, partially refining it.

The probable error of the fineness of the pots for any one day is deduced from 10 reports of as many pots assumed to be alike. Its mean value is 0·0276 of a millième. Hence the probable error of the report of a pot is 0·087* of a millième. As each report is the mean of two single assays, the probable error of a single assay will be 0·123 millièmes.

Again, the probable error of coins used above is derived from 20 single assays of coins; its mean is 0·0806 millièmes, thus the probable error of a single coin assay on the mean of all will be 0·360 millièmes. This probable error is the probable error of a single assay combined with the probable error of a single coin as compared with the mass from which it is taken. The former has been found 0·123 millièmes, hence the latter will be 0·139 millièmes.

Again, it is customary here to check the single assays of coins daily by a double assay of the melted mass resulting from 20 coins spoilt in the stamping presses. The probable error of each such report is combined of the probable error of the mean of 20 coins together with that of a double

* I have assumed that 0·1 of a millième is a sufficient approximation in valuing the Theoretical fineness.

assay, or is 0·116 millième. The usual daily check is one such report from a melting and 10 from single assays of coins, and, as the probable errors of these values are 0·116 and 0·114 respectively, it is evident that they are practically of equal weight: when so taken the probable error of the mean fineness of a day's work will be 0·081 millième.

In receiving Bullion about seven separately assayed parcels make a lac (1,00,000) of Rupees in value. The probable error of an assay report has above been found to be 0·087 millième and that of a lac (in value) of Bullion 3·29 Rupees from assay only. The probable error of a lac of coinage is 8·1 Rupees from its assay, which shows that even for this small daily outturn, the valuation is not sufficiently good; and the uncertainty increases in proportion to the outturn, while that of the intake does not increase so fast.

With 1	lac of outturn	the probable error is	2·47	that of	equal receipt
2	„	„	3·50	„	„
3	„	„	4·27	„	„
4	„	„	4·95	„	„

In order that the assay valuations of receipt and outturn should be similar, the coinage should be only 63,600 Rupees daily.

If these checks stood alone, it would be impossible for a Mint Master to feel any confidence in his work. And an assay establishment sufficiently large to value a heavy coinage thoroughly, and to make the necessary assays of single coins would be very expensive. The assays of pots are a very valuable test in a large coinage, especially when, as here, they are made nearly uniform in composition and thus check each other. In practice a coin beyond the legal remedy of two millièmes in fineness is almost unknown, but the law is now probably as exacting as it is possible to make it.

I am very greatly indebted to Mr. Edis, who was acting as Assay Master of this Mint, for the attention and skill he gave to these assays, which were more in number than the amount of work ordinarily would have called for. The accuracy of his work is proved by the small probable errors.

To obtain these data was the primary object of my experiments: incidentally, however, the weighments which are made in passing the metal from hand to hand furnish some interesting information as to the general working of the Mint which I purpose here to place on record.

The unit of weighment is a tolah (the weight of a standard rupee) of 180 grains, which is here decimally divided: 8 tolahs are equivalent to 3 ounces Troy; the English Pound contains 38·88889 and the kilogram 85·73526 tolahs. And hence—

1,00,000 Rupees should weigh 1,00,000 tolahs.
" 37,500 ounces Troy.
" 2,571·4296 Pounds = 1·14796 Tons.
" 1,166·3811 kilograms.

The Melter receives his silver in bars and lumps, and also as scissel and rejected blanks and coins. The portions for each pot and its proportion of copper are separately delivered. His results are—

1*st.*—Ingots which can be weighed as soon as cleaned.

2*nd.*—Chippings from the bars and spillage which require to be cleaned before weighment: usually next morning.

3*rd.*—Ends of ingots and pieces cut off before delivery to the laminator as not being fit for straps.

4*th.*—He has drosses and sweep which contain more or less silver and of which the value cannot be known till later.

The following table shows the results obtained in this department from these experiments, as to which it must be noted, that while the metal is accurately weighed to the Melter, the future weighments are less accurate until it takes the form of coin, for it would be impossible to give the same time and care to weighments which are mere checks that are necessarily given to the more important ones; or to use balances for them as delicate.

Melting No.	Weight given to Melter.	Outturn.			Approximate Loss.
		Good Ingots.	Heads and Pieces.	Particles.	
	Tolahs.	*Tolahs.*	*Tolahs.*	*Tolahs.*	*Tolahs.*
89	119,447·0	118,908·8	0	461·2	77·0
92	125,148·0	124,573·6	0	505·4	69·0
93	125,121·0	124,667·8	0	357·5	95·7
94	125,076·0	124,557·8	0	426·8	91·4
95	125,090·0	124,642·6	4·0	388·0	55·4
96	125,133·0	124,676·8	0	387·4	68·8
97	124,023·3	123,114·8	103·0	754·5	51·0
98	124,530·0	123,496·4	531·0	442·4	60·2
114	125,434·0	124,691·2	280·0	366·2	96·6
115	125,973·0	125,480·4	0	423·9	68·7
Sums.	1,244,975·3	1,238,810·2	918·0	4513·3	733·8
Percentage.		99·50480	0·07374	0·36252	0·05894

Hence it will be seen that about $4\frac{1}{4}$ per cent. alone of the weight is unaccounted for at once, and that, after the particles are all recovered, the amount left in the drosses is about 6 parts in 10,000, and this includes the alloy burnt away. At the rate of $1\frac{1}{2}$ per cent. on the free copper, the loss on that metal would have been 607·2 tolahs, leaving only 126·6 tolahs or 0·010169 per cent. of the value as a real loss, but what is shown above fairly represents the experience of some years as regards the net loss of weight by burning.

When passed by the test of assay, the ingots go to the Laminating Department, and from this time no trustworthy valuation can be made till the coin is ready for issue. In all the succeeding processes metal is lost by abrasion and by alloy being burnt in the annealing processes and removed in the pickling necessary to clean the surface of the silver for stamping. On the other hand, oil and grease from the machinery adhere to the surfaces and (till the blanks are cleaned) a small portion of oxide adheres and thus the weight is increased.

It will be seen from the following table that the Laminators cut off and reject about 2 per cent. of the metal received, and that, very little weight being apparently lost, the outturn of good blanks is nearly 60 per cent. of the weight of ingots. Good blanks here of course meaning those which are perfect in form and ready to be tested as to their sufficiency in weight. When the whole sweeps have been refined and the silver in them recovered, there is ordinarily a gain in the Laminating Department from the causes I have spoken of. It appears that in a mean of several years the result of crediting the recoveries of sweep &c., has been a small gain in weight in these Departments, amounting to 0·00003 of the amount. It is here that the effect of bad silver is mainly felt: when silver which is derived from ornaments, and a few other sources, is used without being well refined, the floors of the laminating rooms are covered with spangles, causing of course a heavy loss, and the edges of the straps are ragged, so that the outturn of blanks is much less than the normal amount, while the weight of scissel is sensibly increased.

Melting No.	Weight of Ingots.	Laminating.			Fine Rolling.		Cutting out Blanks.			
		Good straps.	Ends and pieces.	Loss.	Good straps.	Loss.	Good Blanks.	Bad blanks and pieces.	Scissel.	Loss.
	Tolahs.	*Tolahs.*	*Tolahs.*	*Tolahs.*	*Tolahs.*	*Tolahs.*	*Tolahs.*	*Tolahs.*	*Tolahs.*	*Tolahs.*
89	118,908·8	116,565·0	2,328·3	15·5	116,558·1	6·9	69,699·4	418·2	46,445·7	— 5·2
92	124,573·6	122,337·5	2,222·5	13·6	122,333·8	3·7	73,944·0	310·3	48,071·5	+ 8·0
93	124,667·8	122,707·1	1,962·8	— 2·1	122,704·6	2·5	74,186·2	265·6	48,240·8	+ 12·0
94	124,557·8	122,320·0	2,222·2	15·6	122,316·2	3·8	73,956·7	207·7	48,156·3	— 4·5
95	124,642·6	122,386·3	2,241·1	15·2	122,385·2	1·1	73,946·4	228·9	48,202·1	+ 7·8
96	124,676.8	122,368·9	2,293·4	14·5	122,363·3	5·6	74,110·1	226·5	48,025·4	+ 1·3
97	123,114.8	120,952·8	2,151·6	10·4	120,950·7	2·1	73,381·0	314·5	47,267·5	— 12·3
98	123,496·4	121,114·2	2,356·4	25·8	121,113·9	0·3	72,747·4	254·5	48,105·9	+ 6·1
114	124,691·2	122,230·3	2,448·1	12·8	122,226·1	4·2	73,075·5	535·1	48,618·8	— 3·3
115	125,480·4	123,011·4	2,450·2	18·8	123,009·1	2·3	73,631·5	356·1	49,029·6	— 8·1
	1,238,810·2	1,215,993·5	22,676·6	140·1	1,215,961·0	32·5	732,678·2	3117·4	480,163·6	+ 1·8
Percentage of Ingots,		98·15818	1·83051	·01131	98·15556	0·00262	59·14370	0·25164	38·76007	0·00014
Percentage of Receipts,					99·99732	0·00267	60·25507	0 25638	39·48841	0·00014

The blanks when cut out pass to an officer whom we call the Adjuster whose duties are very important. After being slightly cleaned the blanks are individually weighed in Automatic Machines, the light blanks are returned to the melting pot, while those that are too heavy have their weight reduced. This used to be done by hand, but we have recently made a machine which deals satisfactorily with about 1500 blanks an hour. As the farther processes of coining reduce the weight of the blanks, an allowance has to be made here for this reduction, and it is part of the adjuster's duty not only to keep his machines in order and see that each blank is within the remedy allowed, but further to check the weights of the bags (each containing 2000 blanks) and see that each bag is within the much narrower limit laid down for his guidance, and that finally even then they are not all on one side so that the error would accumulate.

Melting No.	Tale of Blanks.				Delivery to Milling Dept.	
	Received.	Heavy.	Medium.	Light.	Tale.	Weight.
89	69,662	2,965	63,933	2,764	66,000	66,035·9
92	73,890	2,617	68,928	2,345	70,000	70,042·5
93	74,124	3,086	68,790	2,248	70,000	70,045·0
94	73,906	2,416	69,283	2,207	70,000	70,044·0
95	73,896	2,009	69,959	1,928	70,000	70,044·6
96	74,056	1,420	71,277	1,359	72,000	72,045·4
97	73,300	3,143	67,971	2,186	70,000	70,044·1
98	72,684	2,744	68,232	1,708	70,000	70,044·1
114	73,024	3,028	67,783	2,213	70,000	70,045·5
115	73,582	1,430	70,847	1,305	70,000	70,045·5
Sums.	732,124	24,858	687,003	20,263	698,000	698,436·6
Percentage.		3·39533	93·83697	2·76770		

The proportion of light and heavy blanks beyond remedy is about what has now for many months been usual: the Tale of Blanks sent on is smaller in proportion, and I have not thought the percentage worth giving. Of course it includes heavy blanks reduced, but only whole bags are sent on, and thus not only has the percentage sent on been smaller but it is more regular than usual: I believe too that the weight is more regular.

The experiments were not sufficiently extensive to show the working of the machine for reducing blanks, but the following data will show this and give a comparison with the old method of filing by hand.

In December 1878, 283,639·9 Tolahs of blanks were reduced
by machine to 282,366·5

Silver removed 1,273·4

The recovery was 1243·4 Tolahs of particles worth 1173·61 Rs., showing a loss of 2·356 per cent. in weight of particles
and 7·836 „ „ in value of the silver

In December 1877, 233,349·8 tolahs of blanks were reduced by filing to 232,049·4

Silver removed 1,300·4

The recovery was 1223·7 tolahs of particles worth 1129·28 Rs., showing a loss of 5·898 per cent. in weight of particles and 13·236 „ „ in value of silver.

The accuracy with which a certain amount can be removed per bag has been increased and the cost greatly decreased, for one boy can attend on two machines reducing, if needed, 21,000 blanks a day, whereas this used to require ten men, and as so many were not always available, work often fell into arrears.

I have now to trace the blanks through their last stages till they become rupees.

The adjuster passes on the blanks to what is here called the Milling Department, but in the Royal Mint the work is called Marking. In this process, a few blanks are spoiled when the setting of the machines is defective. The final annealing and pickling come next, and the rupees lastly issue from the Stamping Press, only requiring examination before final issue.

I have not thought it worth while to give here the separate results in the rooms devoted to these purposes severally. Defects in the Milling Department and those in the annealing sometimes pass till they are found out in the presses or in the final scrutiny.

	Blanks from Adjuster.		Rupees fit for issue.		
	Tale.	Weight.	Tale.	Weight at rate of receipt.	Weight after coinage.
		Tolahs.		Tolahs.	Tolahs.
89	66,000	66,035·9	64,832		64,834·0
92	70,000	70,042·5	67,940		67,943·9
93	70,000	70,045·0	68,956		68,961·9
94	70,000	70,044·0	69,005		69,007·8
95	70,000	70,044·6	67,910		67,911·6
96	72,000	72,045·4	70,459		70,458·6
97	70,000	70,044·1	67,738		67,735·8
98	70,000	70,044·1	68,507		68,506·6
114	70,000	70,045·5	68,058		68,057·4
115	70,000	70,045·5	68,407		68,411·6
Sums.	698,000	698,436·6	681,812	682,223·4	681,829·2
Percentage of blanks.			97·68080	Loss of weight in work.	394·2

We have already seen that 59·1437 per cent. of the weight of ingots is converted into blanks. These were in tale 732,124, of which 687,003 were good and 24,858 heavy but capable of being reduced, or in all 711,861 capable of being coined, and we now find that of those sent on from the Adjusting Room 97·68080 per cent. become good Rupees. If then, all had been sent on we might have expected 695,351 good coins whose standard weight would be 56·131 per cent. of that of the ingots.

Further, we find that 681,812 blanks as they leave the adjuster lose in after processes 394·2 tolahs, or 70,956 grains, in weight. Thus the average loss on each is 0·10407* grains, and each blank leaving the adjuster should on an average weigh 180·10407 grains, and each bag of 2000 blanks 2001·156 tolahs.

The general procedure of Minting has been unchanged for very many years, but, as the effects of the coining processes must vary with details of manipulation impossible to define exactly, I some time ago recognized that it was necessary to modify both the amount of additional alloy and the excess weight of the blank over the coin, and resolved to investigate the matter.

I now offer these results to a wider circle than they were originally meant for, because I think that many will be interested in knowing the care that is taken to keep the coinage of India to its standard value. I hope too that it may lead to the publication and circulation of similar results from other Mints and thus to advance in Minting.

* This amount, like the y of the fineness (see note p. 60), varies with manipulation and the quantities are dependent on each other.

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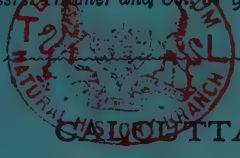
EDITED BY

THE GENERAL SECRETARY.



"The bounds of its investigation will be the geographical limits of Asia: and within these limits its inquiries will be extended to whatever is performed by man or produced by nature."—SIR WILLIAM JONES.

*** *Communications should be sent under cover to the Secretaries, Asiat. Soc., to whom all orders for the Work are to be addressed in India; or, in London, care of Messrs. Trübner and Co., 57 & 59, Ludgate Hill.*



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JOURNAL

OF THE

ASIATIC SOCIETY OF BENGAL.

Part II.—PHYSICAL SCIENCE.

No. II.—1879.

VII.—*Note on the old Burmese route over Patkai viâ Nongyang (viewed as the most feasible and direct route, from India to China).*—*By* S. E. Peal, Esq.

(Received 12th March; read 2nd April.)

(With Plates IV, V, VI, and VII).

Perhaps in no other part of the world can be found a parallel to the small and peculiar region immediately East of Assam, and that separates India from China.

On each side of it we see a large Empire, numbering its people by hundreds of millions, densely located, and who have been for many centuries conspicuous for their industry and intelligence, and with records extending far into the past.

Yet across this interval of some 200 miles only, we find little or no intercourse or trade.

Undoubtedly towards the North and North-East, the difficulties of finding an outlet at any reasonable elevation are demonstrated. In most cases the routes must cross at least 10,000 feet or more, besides being proverbially difficult.

Assam has never to our knowledge been entered by any large force from the North East, or due East, and the only invasions, (excepting those up the valley from the west) have been over Patkai, by the Ahoms and Burmese.

The discovery of a good trade route between India and China, has long exercised many minds. Routes *viâ* lower and upper Burma, to Yunan, have been of late years advocated and partially tried, but all present a consistent feature in the extreme difficulty of the country beyond a certain point.

The experience of the Grosvenor Mission clearly confirms this, and indirectly points to the necessity of crossing the intervening valleys higher up—(the country between Momein and Yunan being reported extremely difficult).

Keeping these facts in view, a few remarks regarding the old route out of Eastern Assam, *viâ* Patkai, and the possibility of a good trade route with western China, *viâ* the Sittang country to the Yang-tse-kiang, may be of some interest.

Some years ago attention was directed to this route and endeavours made to induce Government to explore it.

In 1868 Mr. F. A. Goodenough of the Calcutta Chamber of Commerce submitted a report to Government for co-operation in the matter, urging that the time had come when such an expedition was advisable and likely to be a success. The local authorities, however, viewed the proposition with such marked coldness, that no action was taken in the matter.

In 1868 Mr. H. L. Jenkins crossed the Patkai near the head waters of the Namrúp river, discovering the Nongyang lake on the other side, but he was unable to proceed further that year.*

In 1869 he again started in company with Mr. A. J. Peal, and followed the track of the previous year, and passing the Nongyang lake, found no serious obstacles until they reached the first Singphú villages at Númyúng in the Húkong valley,† where advance was prohibited by the chiefs.

After fruitless attempts to overcome their opposition, the party was compelled to return to Assam, selecting the route by which Dr. Griffiths passed from Assam to Burma in 1837, and which is more to the west.

By the route in, the line generally was both more circuitous and difficult.

Remarking on the latter Mr. Jenkins says, "It is much to be "regretted that Griffiths chanced to take this route, for it is doubtless "owing to his description, that a general impression has arisen that the "Patkai range is a formidable barrier erected by nature to prevent com-"munication between India and the countries lying to the East."

Having been more carefully and recently described than the others,

* See Proceedings A. S. B. 1869, page 67.

† See Proceedings A. S. B. July 1870, page 230 *et seq.*

"Griffith's route" has come to be taken as a type of the difficulties on this question, and has undoubtedly led many into error.

Tracing the subject back, we find that in 1816 some 6,000 Burmese troops and 8,000 auxiliaries crossed Patkai into Assam, at the invitation of the Raja (Chandrakant).

Soon after, it is said, 30,000 followed under Keo Minghi, who returned to Ava in 1818, leaving about 2,000 men behind him in Assam.

About 1821 Maha Thilawa, the Burmese general in Assam, was involved in disputes with us, and in 1822 Menghi Maha Bandula led 18,000 men over Patkai and made Assam virtually a Burmese province.

In 1824, war was declared by us, and the question of routes into Burma was eagerly discussed. Four were declared practicable, two by sea, and two by land, *i. e.*,

Land route,	Calcutta to Ava viâ	Assam,	1,433	miles and	170	days.
„	„ „	Manipur,	1,052	„ „	107	„
Sea route,	„ „	*viâ* Aracan,	835	„ „	39	„
„	„ „	Rangún,	1,446	„ „	82	„

Of the land routes, it was settled that the line *viâ* Assam, and over Patkai was by far the best, but that *viâ* Rangún offering better transport for stores was ultimately adopted.

In 1828, Lieut. Burnett reported on the route by which the Burmese had entered Assam, and it was no doubt on this that Pemberton relied in his "Report on the N. E. frontier" in 1835.

"The passage of the Patkai," he remarks, "is represented as easy "when compared to the seven or eight equally lofty ranges that must be "crossed between Cachar and the Munipuri valley."

On all occasions Pemberton wrote in high terms of this pass, and, after his surveys on the Munipuri side, we may consider him one of the best authorities on the matter.

Sir Ashley Eden has truly said that no man before, or since, has ever had such opportunities of collecting reliable information on the subject, and very few would, or could, make such good use of them.

It was in 1837 that Dr. Griffiths, who was one of the Tea Commissioners, crossed from Assam to Ava. Yet though he started from Bisa, and passed Mainkwan, his route over that portion nowhere coincided with Pemberton's account of the old Burmese one.

After leaving Bisa, in Assam, he took a considerable detour to the west, the reason for which is not I think to be found in his journal, but is attributable to the fact that along the old route villages were maintained, so that not only was the route itself always kept more open and in repair, but provisions obtainable all along.

Whether these villages were kept there by the authorities or remained there of their own choice, and benefitted by the line of trade we cannot now say, but soon after the close of the Burmese war, they migrated westwards; possibly the state of frontier anarchy that followed left them too often at the mercy of necessitous soldiery, to avoid whom they retreated to the higher ranges.

On Griffiths' arrival, therefore, at Bisa, instead of pursuing the old route up the Namrúp river, towards the Loglai basin, we find he made a sudden turn westward and passed through the "Morang Nága" country, crossing Patkai near Yugli at 5,000 feet elevation, and subsequent ranges at 3,500 and again 5,100 feet, Nongyang lake being left fully 20 to 25 miles to the east.

The old route, in fact, at that time had been abandoned—neither food nor transport could be got there—and he was compelled to go where these were obtainable; the old path also by that time would have been covered by jungle and more or less impracticable.

Properly speaking the name Patkai applies only to the highest ridges wherever they occur; in few places are they continuous for any distance; the water parting is often cut up into distinct groups of hills with many low places intervening, more especially towards the eastwards, where from the Nongyang lake, they sink lower and lower, to where Singphus assert they have crossed nearly on the level after Rhinoceros.

It is in this neighbourhood that Mr. Jenkins and others consider it extremely likely that passes may be found at even less than 2,000 feet elevation, and it is evidently near here that the old route lay. The basins of the Namrúp on the north and Loglai on the south, so closely approach each other from opposite sides, as to leave but *one march* between them from water to water.

These two drainage basins, shewing as they do the lowest levels on each side to be in such close proximity, and where the soft strata is most rapidly denuded, naturally indicate the lowest part of the range.

Pemberton describes the old route as follows:

"Bisa, which is the principal village and residence of the head of the "Singphu tribe of that name, stands about 10 miles from the gorge of the "defile through which the pass leads, and the first stage is to the Namrúp "Nulla, on the banks of which good camping ground is found 16 miles "from Bisa.

"Between the 1st and 2nd stages two hills are crossed, the Tontúk "and the Nunnun, neither of which present any difficulties that might not "be easily overcome. The Namrúp flows between these hills, and the "Nunnun* falls into it a short distance from the second encampment;

* Namphúk.

"there is but little jungle in the vicinity of the camping ground, which "has space for a tolerably large body of troops.

"The distance of this stage is 12 miles.

"The third stage, which extends from the Nunnun to the Kasi Nulla, "flowing at the northern foot of the Patkai hill, is about 7 miles.

"After leaving the Nunnun and crossing a low hill, the Namrúp is "again reached and its bed travelled over for 5 miles.

"This portion of the route is the worst, as the bed of the nulla is "filled with large stones and rocks over which the traveller finds it diffi- "cult to make his way, but the Burmese appear to have avoided it "by cutting paths through the forest above.

"From the Kasi Nulla to the summit of the Patkai central ridge, the "distance is about 4 miles, and the ascent is said to be very precipitous, "but it is quite evident from the description given, and the manner in "which the Burmese travelled that there are no serious obstacles which "the judicious employment of a few pioneers would not readily overcome. "From the Kasi Nulla at the northern foot of the Patkai hill across to "the Loglai the first nulla met with on its southern declivity is one long "march, and there is said to be a very inadequate supply of water between "these two streams.

"From the Loglai to old Bisagaun, the original site of the Singphu "tribe, not far from the gorge of the pass on the southern or Burmese "side, there are six marches none of which are either very long or diffi- "cult."

In the above quotation from Pemberton it is noteworthy that the first two, if not three, marches coincide with the route taken by Mr. Jenkins *viâ* the Nongyang lake in 1869.

Both follow the Namrúp for some distance and then leave it where the river makes a long detour to the east, and near to the village of Namphúk, and thence crossing some low hills, descend again to the river, thus cutting off a large bend.

After this, even, it is evident that the routes coincide, and where they diverged it is not now easy to find.

It is extremely probable that the old Burmese route that Pemberton describes, lay a little to the east, for though Mr. Jenkins states they could have crossed the ridge some 500 or 600 feet lower, by keeping more *west*, yet the ranges to the eastwards are generally *still* lower.

From the foregoing it is obvious that the old route held longer to the basin of the Namrúp, and debouched on the Loglai higher up, thus escaping Digum Búm ; the two routes, however, are near each other, and fairly direct, which Griffiths' was not, but it is only by a careful study of the locality

that the best site could be found, all is now forest, and the route line will have to be re-discovered; there can however be little doubt that it crossed Patkai close to this point, and probably at less than 2,500 feet above the sea level, and say 2,000 feet on the spot.

The approaches to Patkai at the part indicated, present no insuperable difficulties on either side; undoubtedly a strip of hilly country extends for some distance north and south, parallel to the main range or ranges, but the country on the northern flank consists of tolerably low hills and rolling land, and on the other side, it seems to be repeated between Digumpáni and the Turong.

The paths on that side, in fact, are now confined mainly to stream-beds between which they cross low spurs; the latter is characteristic of the route between Loglai and Namyung, where it goes by the Kaisu, Namlip, Yúngsúm, and Yungmoi, to the village of Númyúng in the Húkong, or Dinoi, valley.

It is unfortunate that ever since our taking possession of Assam most works that allude to routes between India and China, treat the passage of these ranges as an almost insuperable obstacle.

Excepting by Pemberton, and latterly Mr. H. L. Jenkins, it is generally looked on as a subject hardly worth discussion, or investigation.

It is taken for granted that there is no good, or even fair, route from Assam *viâ* Húkong to the Shán States, and that the Patkai is simply an impassable barrier, whereas the truth is that the more the matter is investigated the more likely it appears that this old route will turn out to be not only the best, but perhaps the *only* available trade-route out of upper Assam, by which we can get anywhere *East*.

From the summit of Patkai, near where the old route crossed, the view south-west is across a rather large triangular valley having a sheet of water in it called "Nongyang" several miles long, and a wooded island towards the eastern extremity. The "Nongyang River" falls in from the west after a course of 12 or 14 miles, mainly between two high and continuous ridges, each called Patkai, that were crossed by Drs. Griffiths and Bayfield, and which river has generally been considered the boundary between Assam and Burma at this part. After passing through the lake the river flows out east into the Loglai, or Laklai, going south and east to the Turong.

On the south, Digam Búm rises very conspicuously beyond the Nongyangpáni; it is probably not less than 3,000 to 4,000 feet high, the surrounding hills north and south being 2,000 to 3,000, with water-courses and passes at perhaps 1,000 feet above the sea level.

Beyond Digam Búm lie the first Singphú villages in the Húkong

valley, the nearest being Númyúng, situated on a river of the same name that rises far to the west, south of Patkai and nearly opposite the Tirap valley (of the northern slope).

The name of this river has been so variously rendered as to make its recognition at times difficult; we find it as the Ramyoom, Kamyoom, Kammiroan, Nam-ma-ron, and Námyúng, the latter no doubt most correct. After passing the village it flows S. E. and falls into the Túrong. From Namyung there is constant intercourse with the south, west, and east, over an undulating but not difficult country. Traders generally pass it *en route* for Assam.

It is extremely significant that the name "Patkai" (which is an abbreviation of Pat kai seng kan*) originated on the pass at the part above indicated, in consequence of an oath there ratified between the Ahom Raja "Chudangpha"† on the north side, with Súrúnphai, the Nora Raja of the south side, whereby each bound themselves to respect the Nongyangpáni as the boundary, and that between them, ere separating, they erected two sculptured monuments, as memorials of the treaty on each bank of the river.

Previous to this period the range there was called "Doikaurang" Doi = Mountain, Kau = 9, and rang = united, namely the place of "nine united hills," or where nine ranges converge, which latter singularly confirms all we know of the place already.

At the site in question, but one range is crossed from water to water, whereas to the west, at least 8 or 9 conspicuous ridges must be crossed ere the plains are reached beyond.

The name "Doikaurang" was bestowed by the first Ahom Raja "Chukhapha," when passing from Nora, or Pong, to take Assam in 1228 A. D.

It seems clearly demonstrated by this time, that there are no trade routes to be expected *viâ* the "Brahmakund," the "Daphapáni," or "No Dehing" valleys, and nothing intermediate is possible.

The sufferings of Lieut. Wilcox and his party in 1827-8 during his attempts to penetrate eastwards are sufficient to deter any re-surveys of those routes for such a purpose.

The Mishmi hills to the north again, or the Abor country, are equally uninviting, nor are lines of traffic more likely through the Daphla hills, except by cattle, and over passes that on the north, as on the east, are not less than 10,000 feet, if as low.

* Pat = cut, Kai = fowls, Seng = oath, Kan = taken.

† Chudangpha's ambassador was the Bor Gohain Tiatanbing, and that of the Nora Raja, Tasinpou, date 1399-40 A. D.

To the south-east, even if a little too far south, must we turn, if anything approaching a trade route out of Assam is to be found, and at or near the old Burmese route, we at once get one that is remarkably easy and that with comparatively little outlay would be suitable for wheel traffic.

The station of Gauháti on the Brahmaputra, is now connected by a fine carriage road to the Shillong plateau, which rises to between 5,000 and 6,000 feet, the last 3,000 feet of which is in a distance of only 12 miles.

The difficulties of crossing Patkai are, at least, *less than half* of those met with on such a road, and that we can easily overcome them we have demonstrated.

Having glanced at the position of the route *viâ* Nongyang, it may be well to indicate those of several others, leading from upper Assam into before noted, the valley of Hukong.

There is a route through the Nága hills west of the Tirap river, and east of the Disang, that enters at the Namsang Nadi, a tributary of the Dihing, and not far south of Jaipur. This line after traversing the bed of the Namsang for some distance crosses the Patkai by the Takum pass, (say 5,000 feet) and thence follows the Namyung till it joins Griffiths' route (the latter is often called the Tirap route).

A second entrance to this same Takum route is from Borhát on the Disang river; the water-shed about here, though, rises to 6,000 and 7,000 feet and is a more continuous ridge.

The late Colonel Hannay advocated a line viâ Bhitor Namsang on the Tankak river in the Sibságar district, passing through the Nága villages of Sangloi, Sangsa, Sangba, Langia (or Longra), Horu Khet, and Chotagaon to Singolani, the latter situated on the Dinoi some 45 miles north and 30 west of Munghhong, and near the western extremity of the valley of Hukong. This line presents no very serious obstacles and is much used.

Another route has been proposed entering the Dhansiri valley, passing Samaguting, and thence *viâ* Phre re ma, Gopsi ma, Dibu ma, Teseshu ma, Tajoga ma, Kaza ma, Jessa ma, Kochapa ma, and lastly Teuchu ma on the Dinoi.

This, however, is over a long line of hilly country and ends far to the west in the valley of Hukong, and from whence any road east must cross the whole line of northern drainage, whereas the endeavour should be to keep in the *level plains of Assam* as long as possible, having in view the facilities on the southern side, and also to penetrate the mountain barrier where not only lowest but narrowest.

Once the plains of Hukong are reached, say near Numphin or old Bisa,

on the Turong, the line would keep north of the Dinoi River, crossing a country covered by open undulating grass plains, whence *viâ* the low Kako hills it could join the trade route to Múngla east of the Irawadi.

The Shuemai, or Phungmai Kha, on which this town is situated, is generally believed now to be the main stream of the Irawadi and flows from the N. E. through a large plain or valley called the Sittang country. There can be little doubt but that Dr. J. Anderson* is correct in supposing that this river has its rise in Eastern Tibet.

It is hardly necessary to remark that a route over Patkai to Upper Burma *alone*, is not pressingly required; what is really in demand (and will continue in demand until solved) is a good route joining India with China.

The advocates of a route to Western China may be divided into three parties: 1st, those who would start eastwards almost at once from near Rangun, and may be called the "Marine" party: 2nd, The far more legitimate one that advocates a line through Burma to the upper provinces, ere starting east, so as to gain not only the China trade but benefit Burma itself by a good line of internal communication; these would be the "Burmese" party: 3rdly, There is a large party both in India and England, if not also in China, who are in favour of a more direct line between India and China if it were possible, even if it had to pass viâ the Hukong valley, and across the northern extremity of Upper Burma, towards Talifu and the Yang-tse-kiang.

These three parties are, so far, distinct, if not actually in opposition to one another, but the question is becoming gradually much simplified. The Marine (or Manchester party) now that India can, and will, beat Manchester in the cotton trade, is certain to die a natural death; a trade route with China *viâ* the *mouth* of the Irawadi is not in demand, so that only the Burmese and Indo-Chinese parties remain. These should really not be found in opposition at all, if the Patkai route is possible; on the contrary, their interests are almost identical; a junction on the upper Irawadi would benefit both.

To imagine that the trade to England from western China, would go by the valley of Assam, while the Irawadi was open, would be absurd. It would be equally so to expect the Indian trade to go *viâ* the Irawadi; each would take what legitimately belonged to it; indeed, without combination between these two parties it does not seem likely that a route to Western China will ever be possible. There is actually no reasonable ground why either should oppose that combination, while there is everything to gain by union.

The immediate future of Burma it is not difficult to forecast, and with

* Journ. Royal Geog. Soc. Vol XL, 1870, p. 286.

such an object in view, as a route joining the two largest empires of the East, it behoves us to look ahead.

The difficulties in connexion with a good trade route from India to China *viâ* Patkai and upper Burma are not *physical ones*, as has hitherto been supposed; the only real obstacles are political ones, which would vanish, the moment Chinese and Burmese jealousy was overcome.

The obstacles to trade, in fact, are all confined to one tribe or race, the Singphús or Kakhyens, who inhabit the hills between Assam, Burma, and China, and by a state of tolerated anarchy, effectually prevent peaceful intercourse.

Until some central authority is recognized, and joint action taken, it is not easy to make head against these turbulent clans; an alliance for their suppression, would at once solve the Indo-Chinese route question, viâ Assam.*

Appendix.

The following few extracts from the diary of Mr. A. J. Peal serve to corroborate the remarks made by Pemberton before quoted, as to the line of route.

"December 6th, 1869. We had great difficulty to get the men to start, and were not off till noon, crossing soon after a couple of low hills, due south of the village (of Namphúk), we struck the Namrúp again and eventually camped 3 or 4 miles up its bed.

"7th. Continued up the bed of Namrúp, and subsequently the Nambong, camping at mouth of the Nanki.

"8th. Marched up the bed of the Nanki after boiling water at 211½° thermometer at 56°, and commenced the ascent of "Patkai" at 11·30 A. M. reaching the summit at 2 P. M., after a hard climb. Boiled water on the top at a temperature of 208°, thermometer 66°. We camped at the first water on the southern slope at about 400 feet down, and had a fine view of the Nongyang lake and also the Brahmaputra.

"9th. We boiled water ere starting at 208½°, thermometer at 55°, descended pretty easily and rested at the ford of the Nongyang river at 11 o'clock, route E. S. E. Subsequently crossed a spur of Digam Búm nearly as high as Patkai, camping at a small stream half way down the other side, course S. E. and tortuous, say 14 miles.

"10th. Started about 9 A. M. and by 10·30 reached the Digampáni, crossing and re-crossing several times, and after ascending a low ridge came suddenly on the Loglai (or Loklae Kha) of which we had a fine view.

* The greater portion of this note was written in 1872.

The bed some 80 or 100 feet below was say 100 yards wide, composed mainly of slaty rock, and with long rapids.

"11th. Marched down the bed of the Loglai, which being composed of boulders was very fatiguing, we passed some fine rapids, and camped at the mouth of the "Kaisu," having only done about 8 miles. We found no dew south of Patkai at night.

"12th. We ascended the bed of the Kaisu and crossing "Kasukú," (or hill) struck the Namlip, after going down which for some 6 miles, camped at the mouth of the Yungsum, a small stream.

"13th. From the Yungsum we crossed a low ridge to the Yungmoi and followed it out to the Namyung river, which we reached at 4 P. M., finding it about 80 yards wide and flowing over shingle. Men at once started on to the Númyúng village for food. J. brought back rice, fish, &c.

"14th. Reached Númyúng village in half an hour after breakfast, finding a nice open place and rice lands, and were very hospitably received."

The party were here met by messengers from the chief of the Dinoi villages prohibiting an advance. While waiting result of a friendly message in return, many traders passed, with daus, amber, &c., for Assam; others again came in from Assam, and from the Nága hills west; a great deal of information was gained from five men who had come from near the Irawadi, due east, they said a great many Chinese passed through their villages to and fro, trading with Hukong, so much so that both they, their wives and even children, could understand Chinese.

The extracts relating to the return journey also completely corroborate what was already known as to the difficulties of the Tírap or Griffiths' route, by which the party returned.

"26th December. Started at 10 A. M. back, after some trouble with the carriers who refused to take the loads by that route, through the Nága hills. He reached the mouth of the Chilly (Tsili) about 4 P. M. after a march of 15 miles.

"27th. This day we arrived at the first Mosang Nága villages; distance 10 or 12 miles.

"28th. Passed through several Mosang Nága villages and camped in one with 60 houses at 1,500 feet elevation.

"29th. After starting, we ascended a very high hill or range (Gedak Búm, say over 5,000 feet) and then down some 500 feet to a Nága village on a spur, surrounded by other villages not far off. They have a fine breed of cattle, and a peculiar hairy little dog like a terrier.

"30th. To-day crossed another high ridge, and camped some 300 feet

down it on the other side, at the first water, it was Patkai. Found it very hard work, as the southern faces of the ranges are either open cultivation, or deserted *jhúms*, destitute of shade, the path in many places almost perpendicular.

"31st. Again over a ridge of Patkai; water boiled at 203°, and we started down to the valley of the Namtsik, where we camped.

"January 1st, 1870. Crossed another high range, over 3,000 feet, crossed a stream, ascending again to Yugli at 3,000 feet or more, from whence we had a fine view of the Tirap valley, and Rangatu rising beyond it to over 3,500 feet, the peak about 4,500.

"2nd. We came down from Yugli to the Tirap river, rising again to 3,500 feet over Rangatu, thence along a ridge passed Rangnam, and down to the river Ti keng, thence up to Kongtam 2,000 feet and *viâ* Wado to Tirap Múk on the Dihing river."

*Elevation of some of the "Passes" north of India, Nipal and Assam, also of some in Tibet.**

	feet above the sea.
Chang chenmo, (Lon. 79°, Lat. 34° 30′)	19,000
Cho morang la, (Tibet)	18,760
Cho la, (Sikim Chumbi)	15,000
Donkia, (Sikim Tibet)	18,466
Ga la, (Nipal) „	16,700
Gua tina la, (Sikim Chumbi)	14,000
Jelep la, (Sikim Chumbi)	13,000
Kongra lama, (Sikim Tibet)	15,740
Kambala, „ „	
Khalamba la, (Tibet)	17,200
Lágúlúng lá, „	16,000
Mariamla, „	15,500
Nilam, (Nipal Tibet)	16,623
Nola, „ „	16,720
Photulá, (To Tibet)	15,080
Tiptala, (Sikim)	
Taklakhar, (Nipal Tibet)	
Taukra la, (Sikim) „	16,083
Walung chung, (East Nipal and Tibet)	10,385
Yakla, (Sikim Chumbi)	14,000
Tulalah, (Bhutan)	10,000

* These are not *selected* passes, on account of their altitudes, but are those best known at the moment of writing.

The average height is 15,458 feet.

DR. GRIFFITHS' ROUTE.

Extracts from Dr. Griffiths' notes regarding the route over Patkai, starting from the Dihing River.

Date.		Miles.	Direct.	Elevation.	
Feby.	19th,	12	S.W.	1,029	crossed Tirap several times and along difficult places.
„	21st,	10			winding difficult path : camped on Tirap.
„	22nd,	12		1,029	route difficult.
„	23rd,	12	S.S.E.	1,413	out of Tirap, crossed high ridge 2,500 feet down to Namtsik.
„	24th,	10	S.S.E.		marched up the bed of Namtsik.
„	25th,	4	S.S.E.	3,026	ascended ridge to 3,500 feet.
March	3rd,	15	S.S.E.	5,000	started up Patkai 1,500 feet above camp, down to boundary (*i. e.* Nongyang).
„	4th,	10	E.S.E.		fatiguing march, (perhaps down Nongyang).
„	5th,	4	E.S.E.	2,138	met Dr. Bayfield.
„	13th,	7	E.S.E.		down Nam ma roan, (*i. e.* Namyung) passed village.
„	14th,	7	E. by S.		Do. Do.
„	15th,	13	E. by S.	5,516	ascended some hours to 5,576 feet, to Natkaw and Kusi. camped at 5,516 feet elevation.
„	16th,	13	S.	3270	descended considerably, camped on Gedak bum (path over 5,000 feet).
„	17th,	10	E.S.E. E.		descended Gedak to Namtsik.
„	18th,	18	N.N.E. E.		Route circuitous, heavy jungles to Namtsik and Turong Rivers.
„	22nd	13	S.S.E.	1,340	Shelling Khat and Kulyung.
„	23rd	10	S.W.		to Lamún and Tsilone River B. Dinoi River 300 yards across.
„	24th	17		1,064	to Mainkwon.

The above has been collated, and names where wrong spelt, altered.

PEMBERTON'S REPORT OF ROUTE FROM BISA.

Probably from Lieut. Burnett's report, March 1828.

Stages	Miles	
1st,	16	Bisa, 10 miles to the gorge and thence to Namrúp River.
2nd,	12	Namrup, over 2 hills, camped at Nunnun.
3rd,	11 ?	Nunnun, to Namrup again, and on to the Khassia, or Khasi.
4th,		Khasi to summit Patkai, 4 miles, down to Loglai.
5th to 11th		Loglai to old Bisa, 6 days.
12th to 20th		Bisa to Magaung 8 marches.

Mogong or M'gaung is the Mong maorong of the Shans, and on the Mogong river, that falls into the Irawadi.

The first eleven stages are nearly identical with Dr. Griffiths' route.

Route from Tirap to Hukong (Mainkwan) by Mr. H. L. Jenkins.

Stages	Assam to Hukong.	and Hukong to Bamo.
1.	Terap muk to Kongtam.	A. Hukong to Jambu hill.
2.	Kongtam „ Youngbhi.	B. To Lebong village on the Nunkung.
3.	Yungbhi „ Yugli.	C. Down it to Namsang múk.
4.	Yugli over Patkai.	D. Do.
5.	Patkoi to Mosang Nága village.	E. Land march to Santok hill.
6.	Nága village to Johanghai.	F. To Nunhang River.
7.	Johanghai to Wada pani.	G. Down Do.
8.	Wada pani to Gedak Búm.	H. Do. to Benauko Singphu village.
9.	Gedak Búm to Disang River.	I. Melankha, on Ú'rúp.
10.	Thence to Sumbogan, Singphu village.	J. To small stream; long march.
11.	Thence to Hukong short march.	K. To Bamo, a long march.
	Eleven stages to Hukong.	Eleven stages to Bamo.

Extract from Assam Boumji relating to Patkai.

(History of the Kings of Assam, p. 13.)

এনেতে আমার কালর ত্যাতান্ বিঙ্গ বর গোঁহাই বাহি সে পাট্‌কাইতে দুয়ো দলে মিলামিলি হল। পাছে দুয়ো কালর রাজ আজ্ঞারে দুয়ো দলে পাট্‌কাইর ওপররনঙ্গ এতাঙ্গ পানিতে হাত জোবরাই, এবং কুকুরাকো কাটী সপত কির লাক্কি ডাকমাও ১৩২৩ সঁকত পাট্‌কাই পর্ব্বতকে সিমা করি দুয়ো বর গোহাঁইর দুটা মূর্ত্তি সিলতে কটালে। নঙ্গ এতাঙ্গর অর্থ এই, নঙ্গ বিল, এতাঙ্গ আছে। আরু বুলিলে বোলে, এই পর্ব্বতকে আমি সিমা করিলো; এতেকে দুইরো মূর্ত্তি এই চিন থাকিব, আরু এই সিমা এরি কোনেও বাহি কোনো কালৈ আক্রমণ করিব নেপাই। এই রূপে মিলামিলি করি সিমা পাতি উভয়েই আপন ঠায়ে ২ গল। পাট্‌কাই পর্ব্বতক চুকাফা রজা দেও-অসম দেসলৈ অহা কালত ডইকাউরঙ্গ বুলিচিলে। তার অর্থ এই, ডই পর্ব্বত কাউ ৯ টা, রঙ্গগোট খোয়া। পাছে এই সিমা করার পরা পাট্‌কাই চেঙ্গকান বুলিলে; পাচলৈ কেবল পাট্‌কাই নামহে জলিল। ঐ পাট্‌কাই চেঙ্গকানর অর্থ এই, পাট কাটি, কাইঃকুকুরা, চেঙ্গঃসপত, কানঃলগালে, সেই ঠাইতে।



Zincographed at the Surveyor Generals Office Calcutta

SKETCH MAP
OF
PATKAI and ROUTES

REFERENCES.

Pemberton's Route

Griffith's or Tirap

H. L. Jenkins'

The Singphús extend East of 96° N. & S

Snow

Dapha pani

Snow

Noihing R.

Dihing River

BISA

old H. L. JENKINS' route

Namruk R.

Makum or Buri

COAL

Namthuk

Jaipur

River Navigable for large Steamers to this point

Borhat

COAL

Dhalaruk

Dirung R.

Water

Komptam 2000

Rungtai 2500

Tirap 3500

Namsek R.

PEMBERTON 1869 2140

HILLS

Naga Hills 6000 ft

Yugli 2500

Morang Nagas 5000

Takum route

7000 ft

Morang Nagas

KHAMPTI

Nongyang

Digum

Logtai R.

Kasia

Jairampur

Yungtan

Yunsein

Namyong

Vunyung R.

Turong River

GRIFFITHS 1837

Snow

Manchu

Sut Khu

Mali khan

BISA

Nmphim

Digu

Tuna

Tara

Namtonai

Manlewan

Kako

Hills

MAINLA

Nmphi or Kyen Dwin R. or Dinoo R.

16 Miles = 1 Inch

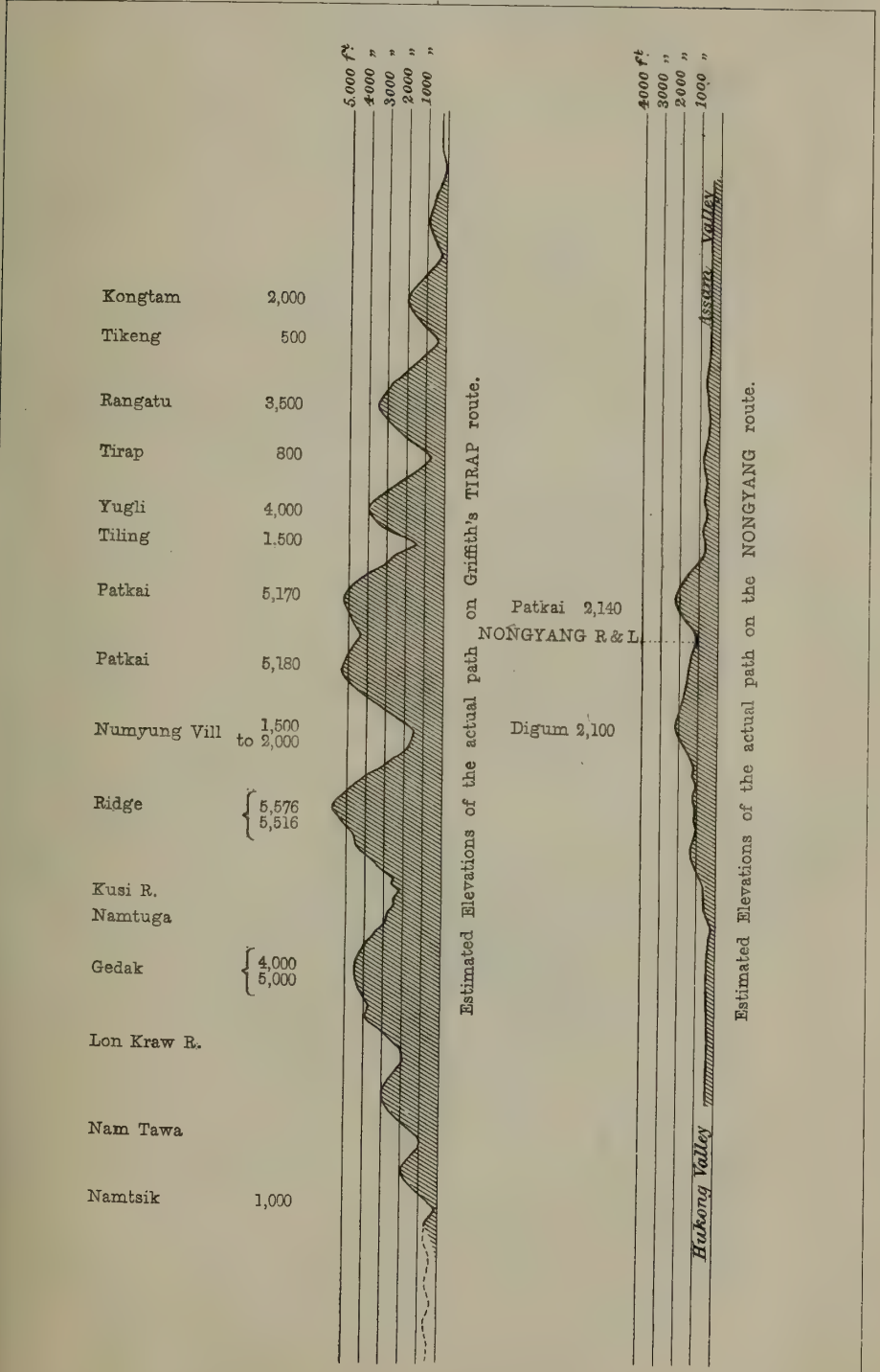
16 8 0 16 Miles

26

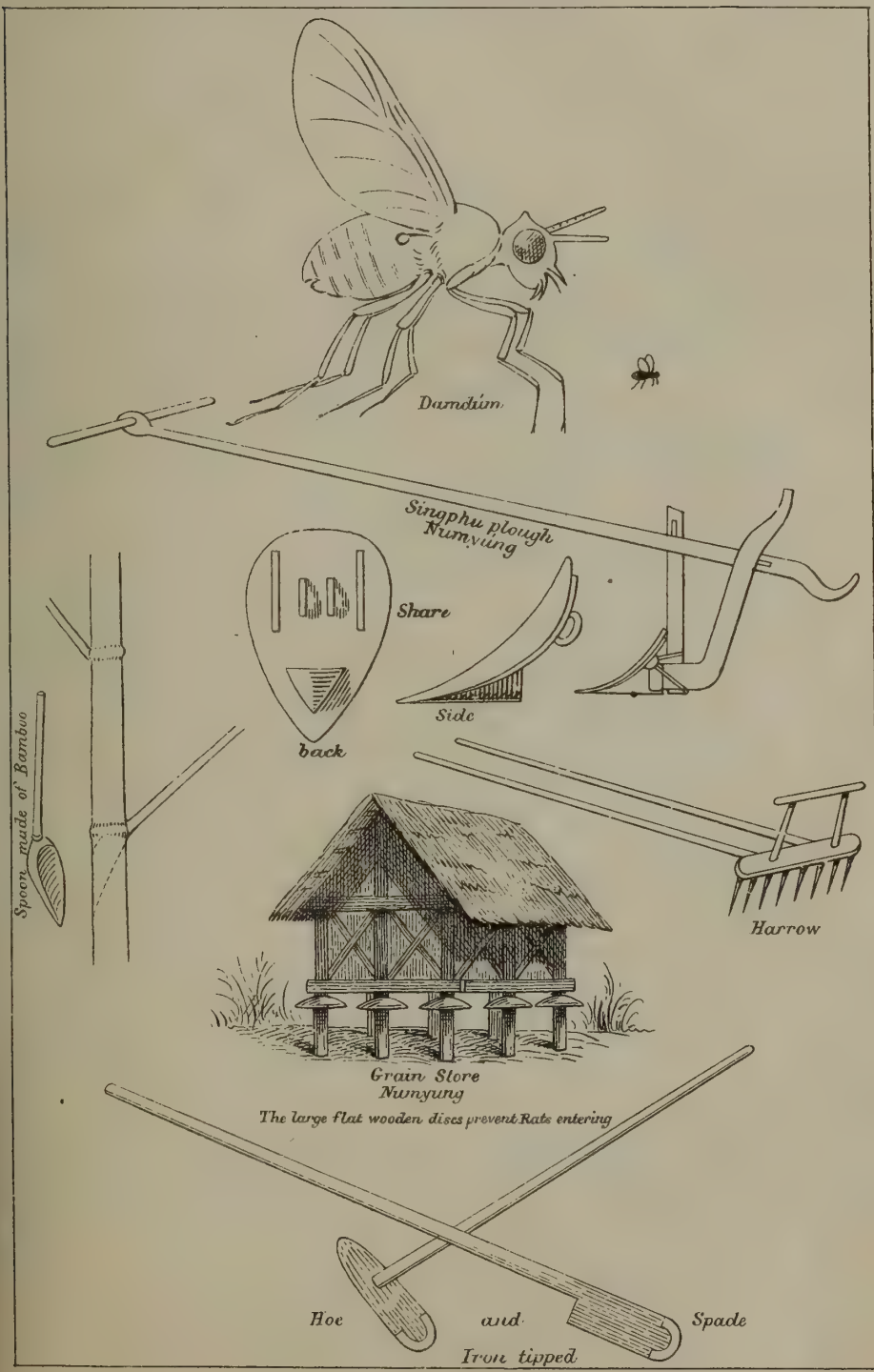
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96

97



Lithographed at the Surveyor General's Office, Calcutta, August 1879.



S. E. Peal, del.

Zincographed at the Surveyor General's Office Calcutta.

VIII.—*On a new Standard of Light.*—*By* Louis Schwendler.

(With Plate VIII.)

No exact measurement of any quantity, even with the most accurate and sensitive Test-methods available, can reasonably be expected unless the standard by which the unknown quantity is to be gauged is perfectly *constant* in itself; or, if nature does not permit of such a desirable state of things, the causes to which the variation of the standard are due, should be known, and in addition also their quantitative effect on the standard, in order to be able to introduce a correction whenever accuracy of measurement should permit and circumstances necessitate it.

This requirement for a standard necessarily entails on the one hand a knowledge of the relations which exist between the standard and the causes of its variation, and on the other hand the possibility of an accurate and independent measurement of these causes.

Further, having no constant standard, it is impossible to produce two quantities of the same kind bearing a fixed and known ratio to each other. Consequently, no idea can be formed of the accuracy of the test-method adopted, and if such is impossible we are also unable to improve the test-method in itself, *i. e.*, with respect both to accuracy and sensitiveness.

The inconstancy of a standard acts, therefore, perniciously in two directions: it prevents us from being able to execute accurate measurements even with the most accurate and sensitive test-methods, supposing such are available; and further leaves us in that deplorable condition of not being able to improve the test-method, although we may be convinced that the method of testing requires such improvement.

It may be safely asserted that in any of the branches of the physical sciences, where constant standards do not exist, the progress in accurate knowledge of nature must be slow, if not impossible.

This train of thought will, I think, invariably beset the physicist who endeavours to make Photometric measurements.

Recent experiments on the value of the electric light as compared with the ordinary means of illumination,* called my attention forcibly to this point.

* These experiments I had to institute on behalf of the Board of Directors of the East Indian Railway Company, under orders of the Secretary of State for India, to enquire into the feasibility and practicability of lighting up Indian Railway Stations by the Electric Light.

Old Standards for Light Measurements.—Up to the present in England the *Standard Candle** has been adopted as the standard of light, the unit of light being defined as that light which the said candle emits when burning steadily at a certain definite rate. In France the *Carcel Burner* (Bec Carcel) has been introduced as the standard of light. The unit of light in this case being defined as that light which emanates from a good moderator lamp burning pure colza oil, at a given definite rate. The ratio of these two arbitrary units, is given by several authorities very differently, the mean value being about :—

10 Standard Candles = 1 Carcel Burner.

These two standards of light, although answering perhaps certain practical requirements, are by their nature ill-adapted to form the units of light intensities. A good and trustworthy standard should possess absolute constancy, or if not, should afford the possibility of application of a correction for the variation and, moreover, should be capable of accurate reproduction. These qualifications are certainly not possessed by the standards at present in use.

A candle of whatever compound and size will partake of something of the nature of a complex body, an accurate reproduction of which must always be a matter of great difficulty. Exactly the same holds good for the Carcel Burner.

Further the amount of light these standards produce, depends to a very considerable extent on external influences, which do not allow of easy control or measurement, and which therefore cause variations in the standard light for which it becomes impossible to introduce a correction. For instance, the rate and regularity with which a candle burns and the amount of light it gives, depend, in addition to the material of which the candle consists, on the ready and regular access of oxygen. In a closed up place, like the box of a photometer, if the draught is not well regulated or the supply of fresh air not quite constant, it can be easily observed that the very same candle may emit light at different times varying as much as 50 per cent. Another difficulty is introduced by the variation of the length of the wick, and of the candle itself, by which the standard light necessarily alters its position in the photometer and consequently its quantitative

* The Metropolitan Gas Act 1860 (23 and 24 Vict. Cap. 125, Sec. XXV) defines the standard candle as :—

"Sperm candles of 6 to the pound each burning 120 grains an hour." I have tried the standard candles as made by two different manufacturers, Messrs. Field and Co. and Mr. Sugg. These candles are sold as six to the pound, and consume according to my own experiments about 8.26 Gm per hour when placed in a large room and direct draughts excluded.

FIG. I

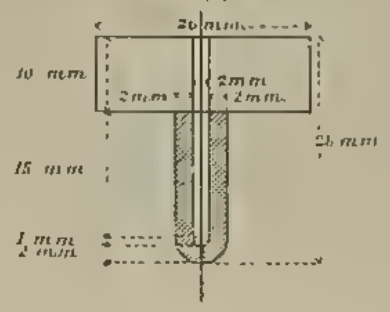


FIG. II

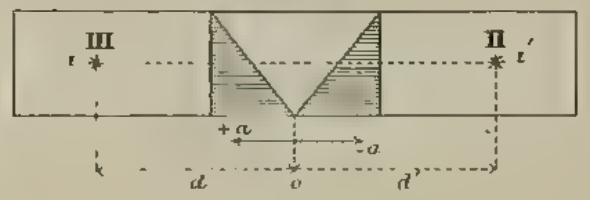


FIG. III

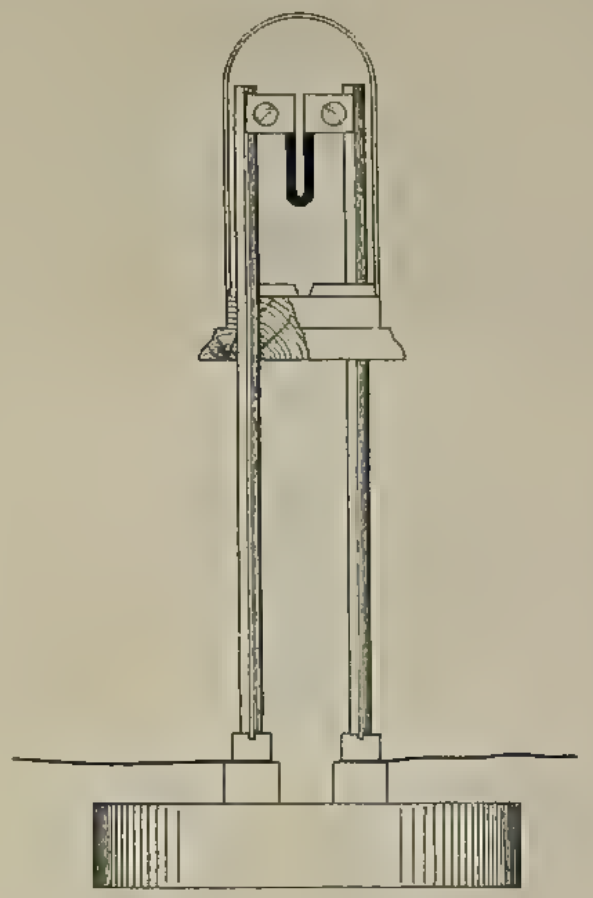
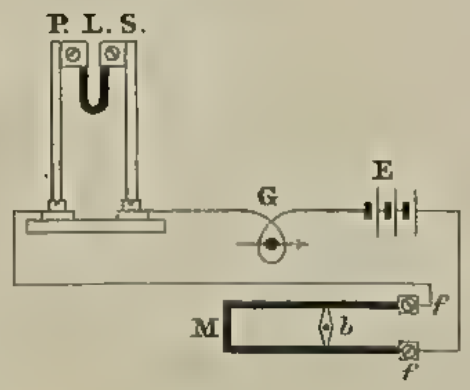
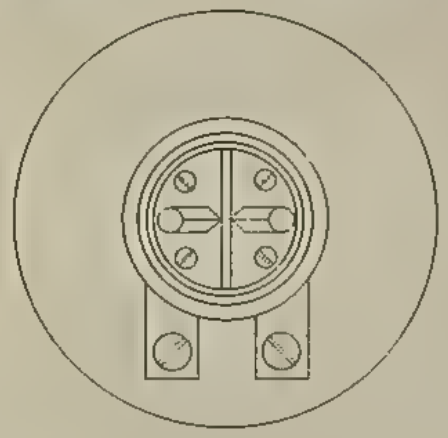


FIG. IV





NEW PLATINUM STANDARD OF LIGHT.

effect on a given point. These difficulties might be overcome to a certain extent by mechanical means; as, for instance, by cutting the wick automatically within equal and short intervals of time, and by placing the candle in a closely fitting metal-tube, against the top rim of which a spring presses the burning candle, in fact a similar construction to that used for carriage candles. But to say the least, all such arrangements are cumbersome. Without going into further details with reference to the Carcel Burner, it may be said that the disadvantages of this standard are at least equally great. In fact it appeared to me that the production of a standard light by combustion is not the right method; the flame resembles too much organic life with its complex and incessantly varying nature. Gauging mechanical force by the power a particular horse of a certain breed is able to exert, can scarcely be called a less scientific standard, than the combustion standard for measuring light. Under these circumstances, I thought it best to leave the old track, and produce the standard of light, *by the heating effect a constant current has, in passing through a conductor of given mass and dimensions.**

New Standard of Light.—Several Platinum Photometric Standards were made and tried. If the current passing through the platinum was kept constant, the light produced was also constant, and for the same current and the same platinum standard, the light was always of the same intensity, under whatever other circumstances the experiments were conducted.

Platinum evidently is the best metal which can be chosen, for it does not change in contact with oxygen; it can be procured very pure and its melting point is high enough to allow an intense light.

It is probable that at a high temperature platinum becomes volatilized, but this process can only be exceedingly slow, and therefore the light produced by a standard, cannot alter perceptibly in time. To make the light constant from the moment the current passes, *i. e.*, to establish dynamic

* The idea of using the light produced by a conductor through which a strong current passes, as the unit of light, appeared to me so natural and simple, that I could scarcely understand why it had not been proposed and acted upon before.

I could however find nothing on the subject anywhere, until lately my attention was called to a small pamphlet written by Zöllner in 1859 in which the same idea occurs:

In the preface to his Inaugural Dissertation, Zöllner says:—

"andererseits aber auch zu zeigen, dass ein galvanisch glühender Platindraht von "den bis jetzt bekannten Lichtquellen zur Aufstellung einer photometrischen Ein- "heit, trotz mancher practischer Schwierigkeiten, vielleicht dennoch das geeignetste "Mittel sei."

I have since learnt that Dr. Draper, as early as 1844, proposed a "unit lamp" consisting of a platinum strip heated by an electric current.

equilibrium between the heat produced and the heat lost per unit of time, it is necessary to make the arrangement in such a manner, that the electric resistance offered by the standard is only in the piece of platinum, intended to be made hot by the current, and not in the other parts of the circuit.

For this reason I find it best to cut the piece of platinum out of a platinum sheet.

Figure 1, Plate VIII gives the form in actual size. The two ears, left white in the drawing, may then conveniently form the electrodes between the leading wires and the piece of U-shaped platinum which has to produce the light. As the U-shaped portion is left in its natural connection with the ears, the contact takes place over a large surface, and therefore the contact resistance must be small. This special form, if the dimensions are defined as well as the weight of the platinum sheet, out of which it is cut, can be easily reproduced anywhere. Further it is required to exclude the draught from the heated platinum. This is best done by putting on a cover of thin white glass. One half of it is left white, the other half is blackened on the inside. This precaution is required in order to insure that light emanating from one side only of the platinum is used in the photometer.

Otherwise light from the back part of the heated platinum, would be reflected into the photometer. This part is unknown and could therefore not be taken into account when measuring the light emanating from one side of another light. In fact to be able to form right conclusions from Photometric measurements, it is necessary to arrange the experiment in such a manner that either the two lights under comparison throw the same fraction of the total light into the Photometer, or if this is impossible, to ascertain this proportion accurately.

The Platinum Standard light (PSL), described before, we will call in future A. Sending a current of 6.15 webers through it (15° deflection on my large Tangent Galvanometer, for which the constant = 2.296 C. G. S.), the PSL (A) produces a light equal to 0.69 Sugg's candle, or,

1 Sugg's candle = 1.44 PSL (A) with
6.15 webers.

Hence, if this particular light were adopted as the unit, we might define it as follows:—

6.15 webers passing through a piece of Platinum 2 mm. broad, 36.28 mm. long and 0.017 mm. thick, weighing 0.0264 Gm., having a calculated resistance = 0.109 S. U., and a measured resistance = 0.143 S. U. at 66° F. gives the unit for light intensity.*

* In order to show that a platinum light standard can easily be reproduced, I will give here some actual measurements:—

The Platinum sheet out of which the P. S. L. (A) was cut weighed 0.0364 Gm. per square centimetre. From this the weight of the part which becomes hot calculated,

Photometric Measurements. Having now a constant light it became possible to measure the variations of light which the combustion standards invariably show.

For instance one of Sugg's Candles was compared with the P. S. L. (A) with the result shown in the following table :—

Distance in Millimetres.		Remarks.
P. S. L. (A) with 6.15 webers.	Sugg's candle.	
100 mm.	117 mm.	The P. S. L. (A) was kept at the same position = 100 mm.
These readings were taken in about five minutes.	120	
	112	
	110	Sugg's candle was moved in order to get the light equal.
	120	
	120	
	120	The variations observed were actually in the candle and not in the Platinum standard, as the eye could easily discern.
	120	
	126	
	128	
	117	
	120	
	123	
	127	

This gives as an average :—

1 Sugg's Candle = 1.44 P. S. L. (A) with 6.15 webers.

$\frac{\text{Max :}}{\text{Min :}} = \frac{1.64}{1.21}$, or total variation of the candle about 30 per cent. from the average in the very short interval of time of about five minutes. This needs no further comment. Some additional experiments were made in order to ascertain the variation of the light of a standard candle.

---

gives 0.0264 Gm. The resistance of the standard, measured at 66° F., gave 0.143 S. U., including contact resistances.

Now another piece of Platinum sheet 26 × 28 mm. was found to weigh 0.265 Gm. The piece cut off which actually becomes hot = 0.026 Gm., which agrees within 0.0004 Gm., with the weight found by calculation for the P. S. L. (A) actually used.

Taking the specific resistance of Mercury = 96190
of Platinum annealed = 9158 } at 0° C.

the calculated resistance of the Platinum which becomes hot = 0.109 } S. U. at
Measured resistance, including contact resistance = 0.143 } 66° F.
or contact resistance probably = 0.034 S. U.

It is therefore much more accurate to define the P. S. L. by weight, than by resistance.

The P. S. L. (B)* with a current = 5.9 webers was used as unit.

1*st Candle*, 7 readings in 10 minutes

mean = 1.08 P. S. L. (B)

$$\frac{\text{max:}}{\text{min:}} = \frac{1.19}{1.00} \text{ or total variation} = 17.6 \text{ per cent.}$$

The maximum was obtained directly after having opened the Photometer when fresh air entered.

2*nd Candle*, 10 readings in 14 minutes

mean = 1.07 P. S. L. (B)

$$\frac{\text{max:}}{\text{min:}} = \frac{1.32}{0.69} \text{ or total variation} = 59 \text{ per cent.}$$

The minimum was obtained directly after freshly lighting the candle.

3*rd Candle*, 12 readings in 24 minutes

mean = 1.07 P. S. L. (B)

$$\frac{\text{max:}}{\text{min:}} = \frac{1.30}{0.81} \text{ or total variation} = 46 \text{ per cent.}$$

The lowest reading was obtained shortly after lighting the candle.

4*th Candle*, 14 readings in 22 minutes

mean = 0.94 P. S. L. (B)

$$\frac{\text{max:}}{\text{min:}} = \frac{1.26}{0.58} \text{ or total variation} = 72 \text{ per cent.}$$

The lowest reading cannot be accounted for.

Two new Platinum Light Standards of the same form and size as the P. L. S. (A) described before, were placed in circuit of 8 Grove's cells connected up successively and with a Mercury Rheostat in circuit, to keep the needle of the Tangent Galvanometer at a constant deflection.

These two new P. L. S., called II and III, were placed in the Photometer to compare their lights and by it test the accuracy of the Photometer readings, and other influences to be named further on. (see fig. 2, Plate VIII.)

$$d + d' = D = 250 \text{ mm (constant).}$$

Light i produced by P. L. S. (III), Light i' produced by P. L. S. (II). The balance between the two lights being obtained by moving the prisms within that fixed distance. A piece of red glass was used for taking the readings.

* This Platinum standard (B) was the first made, and has a different form from the other (A) described: Dimensions and weight cannot be accurately given now.

In the following table the results are given :—

No. of Experiment.	P. L. S. II producing i^1 d^1 mm from Prism.	P. L. S. III producing i d mm from Prism.	Deflection on Tangent Galvanometer.	$\frac{i^2}{i}$	Remarks and particulars.
1	100 100 100 100 100 99 100	150 150 150 150 150 151 150	18.8 18.8 18.8 18.8 18.8		Both lights having glass covers, but glasses were quite clear.
1	99.86	150.14	18.8	0.44	
2	103 102 102 103 102	147 148 148 147 148	18.8 18.8		A clear glass cover on No. III; no glass cover on No. II.
2	102.4	147·6	18.8	0.48	
3	98 97 98 98 98 99 98	152 153 152 152 152 151 152	18.8 18.8 18.8		A clear glass cover on No. II; no glass cover on No. III.
3	98	152	18.8	0.42	
4	98 98 99 100 100 98	152 152 151 150 150 152	18.8 18.8 18.8 18.8		A glass cover on No. III, the back of it covered inside with black paper; a clear glass cover on No. II.
4	98.83	151.17	18.8	0.43	
5	101 101 102 101 101	149 149 148 149 149	18.8 18.8 18.8		Both lights covered up with glass covers, each glass cover having inside a black paper.
5	101.2	148.8	18.8	0.46	

No. of Experiment.	P. L. S. II producing i^1 d^1 mm from Prism.	P. L. S. III producing i d mm from Prism.	Deflection on Tangent Galvanometer.	$\frac{i^1}{i}$	Remarks and particulars.
6	103 101 101 101 101 101	147 149 149 149 149 149	21.0 21.0 21·0 21.0 21.0		Current increased by decreasing the resistance of the Mercury Rheostat, but kept constant at 21°. Clear glass again on both like experiment No. 1.
6	101.3	148.7	21.0	0.46	
7	104 103 102 102 102	146 147 148 148 148	21 21 21 21 21 21		Clear glass cover on No. III. No glass cover on No. II.
7	102.6	147.4	21	0.48	
8	101 100 100 99 100 100 100	149 150 150 151 150 150 150	21 21 21 21		Clear glass cover on No. II. No glass cover on No. III.
8	100	150	21	0.44	
9	101 101 101	149 149 149	21 21 21		Both the clear glass covers on.
9	101	149	21	0.46	

The Deflection 18.8° represents a current = 7.82 webers.

The Deflection 21.0 represents a current = 8.81 webers.

From these results the following conclusions can be drawn :—

The thin glass covers, as was to be expected, absorb a measurable quantity of light. Compare the results of experiments Nos. 1, 2 and 3, and of 6, 7, 8 and 9.

Covering the glass covers inside with black paper to avoid back-

reflection, appears to weaken the light, as was to be expected. Compare the results of experiments Nos. 1, 4 and 5.

The ratio $\frac{i^1}{i}$ of the two lights is independent of the strength of the current, which it ought to be.

These results, although showing nothing extraordinary, *i. e.*, what could not have been foretold without making the experiments, are nevertheless valuable, since they prove that in the first instance thin glass covers take away very little light, and that back-reflection is also very little; but small as these influences are, they have been unerringly measured by the Photometer, showing this instrument to be very accurate and the eye quite trustworthy. That the light i produced by P. L. S. III was so much more intense than i^1 produced by P. L. S. II., is due to the fact that the Platinum sheet out of which No. II. was cut was much thicker than the other.

Detailed description of the Standard and the method of using it.

Fig. 3, Plate VIII. gives the construction of the Platinum standard in half its natural size. I need not give further explanation on this point as everything will be readily understood from the drawing.

Fig. 4 shows the diagram of the connections.

P. L. S. is the standard—

G a current indicator, or better, current measurer. The deflecting ring must consist of a few convolutions of thick copper wire—of no perceptible resistance. The small magnet needle is best to be pivoted, carrying a long aluminium index.

E is the battery, consisting of a few elements of high E. M. F. and low internal resistance connected up successively. Grove's, Bunsen's or large Daniell's cells will answer well for the purpose.

(1) is a stopper by which the circuit can be conveniently opened or closed.

M is a mercury rheostat of about one unit resistance. A groove of about 1 mm. section and 1 metre total length is cut into hard wood (not ebonite, as mercury does not run well in ebonite). The hard wooden board is supported by three levelling screws.

Further the mercury is in perfect metallic contact with two iron terminals *f f*. These terminals are not to be fixed to the board. They are simply placed into the mercury, which fills small reservoirs at each end of the mercury thread.

The resistance of the mercury rheostat can be easily altered by moving the bridge *b* along the two parallel mercury grooves. If the bridge is taken out, the total resistance of the rheostat is in circuit.

If the bridge b is close to the two terminals f f, the resistance of the rheostat is nil.

This range of resistance with about 6 to 10 volts will prove sufficient to make the current strong enough and to keep it constant for many hours, especially if the precaution is taken to open the circuit when no light is required. The bridge b consists of a strip of copper at least 2 cm. broad and 1 mm. thick. The knife edges which dip into the mercury are amalgamated.

The current measurer G has been gauged by comparison with a standard tangent galvanometer; so that the currents indicated by certain deflections of the needle are correctly known in absolute measure.

Whenever a Photometric measurement is made the current is adjusted to its defined strength, *i. e.*, the given known deflection is procured by moving the copper bridge b.

If the instrument G is well constructed, this adjustment of current strength can be executed as accurately as weight measurement by a chemical balance.

Correction for the Standard.

Although with the above arrangement it will be always possible to keep the current constant and up to its defined amount, it might nevertheless happen under particular circumstances that the current producing the light has been rendered different from the current for which the standard has been defined.

In this case the following correction can be applied :—

$$\iota = \frac{1}{(1+\alpha)\left(\frac{c}{\gamma}\right)^2 - \alpha}$$

where c is the current for which the intensity of the light has been defined as unity.

γ the actually observed current, and α the co-efficient for platinum which gives the percentage variation of resistance for high temp, 1500°-2000° F. for 1° Celsius.

This correction has been developed under the supposition that the light produced in the given piece of platinum is proportional to the work done by the current through the resistance of the platinum, and that, further, temperature and light are proportional. These suppositions are almost correct for small variations of the current.

In conclusion it may be stated that it was ascertained that the Platinum Light Standard (B) produced the unit intensity of light, (the unit of light equal to the light emitted by the Standard Candle) at a total expenditure of energy equal to 427 Ω ergs per second. Of these, 300 Ω ergs were actually transformed into light by heating the platinum up to a high temperature; while the remaining 127 Ω ergs were lost for illuminating purposes, being used for raising the temperature of the circuit exclusive of the Platinum Standard.

The Platinum Light Standard (A) being made of much thicker platinum sheet, showed a much less favourable result. The unit of light by (A) was produced at a total expenditure of energy equal to 1226 Ω ergs per second, of which 725 Ω ergs were actually transformed into light, the remaining 501 Ω ergs were wasted in heating the circuit to low temperature (no light). Considering that the unit of light can be produced in an electric arc at a total expenditure of energy of 10 Ω ergs per second only (see my *Précis of Report on Electric Light Experiments*, London, 1st Nov. 1878, p. 11), when produced by Siemens's intermediate Dynamo-Electric Machine, it follows that from an engineering point of view, light by *incandescence* can scarcely be expected to compete with light by *disintegration* (electric arc).

In fact, it appears that light by *incandescence* is scarcely any cheaper than light by *combustion*. The reason for this is that the temperature of an incandescent platinum wire is not very much higher than the temperature of a flame, and that for unit volume the mass which has to be kept up heated in a piece of platinum is much larger than the mass in a flame. Unless we should be fortunate enough to discover a conductor of electricity with a much higher melting point than platinum, and that the specific weight and specific heat of that conductor is also much lower than for platinum—and that at the same time the new conductor does not combine at high temperatures with oxygen, we can scarcely expect that the principle of incandescence will be made use of for practical illumination.

Further it was ascertained that the resistances of the platinum light standards (not including constant resistance) were as follows :—

P. L. S. (B) = 0·136 Ohm at 22·2° C.
= 0·876 „ at the temperature of the standard,

where the light was measured, or increase $\frac{0{\cdot}876}{0{\cdot}136} = 6{\cdot}44$.

P. L. S. (A) = 0·102 Ohm at 18·9° C.
= 0·964, „ at the temperature of the standard,

where the light was produced, or increase $\frac{0{\cdot}964}{0{\cdot}102} = 9{\cdot}45$.

I regret that I have not been able to calculate from the above results the temperature of the heated platinum, since I could not procure in time a copy of Dr. William Siemen's Bakerian Lecture (1871), which at present, to my knowledge, is the only source where the increase of resistance of platinum at high temperatures can be found.

To sum up :—

The advantages of the new standard of light are :—The light is perfectly constant if the current be kept constant ; it allows a correction to be made for the variation of the current if this variation is known ; it can be reproduced accurately everywhere if ordinary precautions be taken to secure pure platinum ;* its magnitude can be altered to any extent to suit certain practical purposes by simply varying the elements of weight, shape, and size of the platinum, or the strength of the current passing through it ; it does not alter of itself either in intensity, size, or position, and therefore by it most accurate photometric measurements can be executed ; the standard can be easily made to fit into any adopted system of absolute units. Hence the new standard fulfils *all* the recognised conditions of a perfect and rational standard, and therefore it would be advisable to adopt it in future, as the practical standard for light-measurement. There would be no practical difficulties met with in the introduction of the new standard for technical purposes.

* The conductivity of any metal is much lowered by slight impurities, and platinum does not form an exception. Hence great care must be exercised in the selection of platinum for the light standard. Dr William Siemens in his Bakerian lecture says : "The abnormal resistance of some platinum is due chiefly to the admixture of iridium or other metals of the same group, and it appears that platinum prepared by the old welding process is purer and therefore better suited for electrical purposes than the metal consolidated by fusion in a Deville furnace."

IX.—*A second note on* Mammalia *collected by Major Biddulph in Gilgit.*—*By* W. T. Blanford, F. R. S., &c.

(Received and read May 7th, 1879.)

In the Journal of the Society for 1877, (Vol. XLVI, Pt. 2, p. 323,) I gave a brief note of some mammalian skins sent by Major Biddulph from Gilgit, comprising a fox, an otter, a mouse, a hare and a *Lagomys*. Another small collection has since been forwarded to the Indian Museum by the same officer. This is even more interesting than the last, for two of the species belong to a genus, *Cricetus*, not previously found in the valley of the Indus, although widely distributed in Central Asia. At the same time a rat is sent that is undistinguishable from a common Indian species. The other skins belong to a mouse and to two species of fox. On each of these I will add a few notes.

1 and 2. *Vulpes*, 2 sp. Two fox skins sent by Captain Biddulph are very difficult to determine. The larger is an animal apparently about the size of *Vulpes montana*, but darker in colour and much less rufous. The dark colour, so far as is it due to the black tips of the longer hairs, may perhaps vary with age, but it is in great measure caused by the under-fur, which differs from that of *V. montana* in being more dusky, and especially in being brown at the extremity instead of bright rufous. The ears are sooty outside instead of black, and the throat is not so dark a grey as in Simla specimens of *V. montana*, but these differences are not of much importance.

There is a well marked distinctive character in the skull of the two types. The brain-pan in the Gilgit fox is broader and higher, and the occipital portion in consequence differently shaped. The lower jaws too are somewhat different.

The following is a description of the skin, which was evidently procured in winter.

General colour dusky fulvous, the colour being much darker in consequence of the under-fur shewing through; there is a slight rufous tinge on the back caused by the extremities of the long hairs being tinged with red; lower parts dusky grey, outside of limbs and of ears sooty black, margins of ear covered with dense short hairs of a creamy white or pale buff colour; face pale rufous, darker in front of the eye, with a brown patch before each eye. Whiskers black. Tail tip wanting, the basal portion pale fulvous, with black tips to the long hairs. Hairs of back of neck and of flanks also black tipped. The under-fur on the back very long and woolly, of a brownish grey colour, paler at the base. Ends of the longer hairs very pale fulvous.

Feet thickly covered with brown hair beneath, so that the toe pads are almost concealed. Hind foot and tarsus nearly 6 inches long.

The following are comparative measurements in inches of the skull with that of a ♀ *V. montana* from Simla.

	Gilgit fox.	*V. montana.*
Length from base of foramen magnum to end of premaxillaries,	4·85	4·92
Breadth across zygomatic arches,	2·92	2·83
Ditto of brain-pan where widest,	1·97	1·76
Height of ditto from lowest part of auditory bullæ,	2·05	1·8
Breadth of cranium behind postorbital processes,	0·9	0·78
Breadth across postorbital processes,	1·25	1·23
Length of suture between nasals,	1·73	1·75
Ditto of bony palate from opening of posterior nares to end of premaxillaries,	2·68	2·75
Length of mandible from angle to symphysis,	3·94	4·
Height ditto from angle to coronoid process,	1·41	1·45

In form there is much resemblance between the skull of the Gilgit fox and that of a species of which the Museum possesses numerous specimens brought from Afghanistan, but said by the man from whom they were purchased to be from Bokhara.

The other fox is a very pale-coloured animal closely resembling the type of the Afghan *V. griffithi** in colour, except that the back is rather more rufous and there is a want of the black tips to the hair on the back of the neck. These differences may be due to age. The skull is smaller and the muzzle distorted. The face, front of the fore legs, outside of the hind legs, and back are rusty red, the latter dusky from the admixture of black tipped hairs. Ears sooty black. Under-fur grey with a pinkish tinge.

I believe this animal is a variety of *V. griffithi*, the small fox of Afghanistan. The larger fox I am unable to determine satisfactorily. It is allied to *V. montana*, and *V. flavescens*, and should be compared with *V. melanotus*,† or at least with the animal usually thus designated by Russian naturalists.‡

3 and 4. *Cricetus (Cricetulus) phæus*§ and *C. (Cricetulus) fulvus.*‖

* Blyth, J. A. S. B., 1854, XXIII, p. 730, and 1845, XIV, p. 344.

† *Canis melanotus*, Pall., Zoog. Ros. As., Vol. i, p. 44, identified by Gray with *Canis karagan*, Erxleben.

‡ *E. g.*, Severtzoff. Turkestanskie Jevotnie, p. 61;—Ann. Mag. Nat. Hist., July 1876, Ser. 4, XVIII, p. 48.

§ Pallas, *Glires*, pp. 74, 261, Pl. XVa.

‖ W. Blanf., J. A. S. B., 1875, XLIV, Pt. 2, p. 108; Scientific Results, 2nd Yarkand Mission, *Mammalia*, p. 45, Pls. IX, X *b*.

Of the former of these species three skins have been sent by Major Biddulph, of the latter two. They thoroughly confirm the distinction between the two species, the first named being smaller and much greyer, the latter larger and more rufous. There is a corresponding difference in the size of the skulls, though very little in form; that of *C. fulvus* measures 1·17 inches long by 0·64 broad, and that of *C. phæus* 0·94 by ·48. *C. fulvus* probably weighs at least twice as much as *C. phæus*. The tail is much thicker in the former than in the latter.

5. *Mus erythronotus*.* There are, amongst the Gilgit skins, two specimens of a slightly rufescent white-bellied mouse, with rather a long tail. This mouse, like the *Criceti*, is evidently the same as a species of which specimens were brought by Dr. Stoliczka from Wakhán in the upper Oxus valley in 1874. I was at first disposed to identify this mouse with the European *M. sylvaticus*, but there are, I find, differences in the skulls; the occipital portion and the foramen magnum in the European species being higher in proportion to the breadth, whilst the opening of the posterior nares is much narrower, the breadth being less than that of the anterior upper molar, whilst in the Wakhán skull the breadth exceeds that of the molar. In *Mus sylvaticus*, the hinder upper molar is only about a fourth of the size of the second molar, whilst in the Wakhán and Gilgit skulls the third molar is about half the size of the second. In the form of the occiput the skulls from Wakhán and Gilgit agree with the figure of the type of *M. erythronotus*, the specimens of which belonging to the Indian Museum appear unfortunately to have been mislaid. The comparison is imperfect, and it is far from improbable, with a good series of specimens, that all these races would be found to grade into typical *M. sylvaticus*, of which, it should be said, only a single skull is available for comparison.

The important fact is, however, that of the small number of rodents hitherto detected in Wakhán and Gilgit respectively, three, a mouse and two *Criceti*, are identical, and that consequently part of the fauna of the Gilgit portion of the Indus valley differs from that of Ladák so far as known, and agrees with that of the upper Oxus.

Compared with the figure of *M. erythronotus*, the Wakhán and Gilgit mouse is rather less rufous, and the tail in the latter is distinctly dark brown above and pale below.

6. *Mus rufescens*, auct. The last specimen sent is perhaps the most remarkable of all, for it is a white-bellied, long-tailed rat of moderate size, quite undistinguishable, so far as I can see, from specimens of the common

* W. Blanf., Eastern Persia, II, p. 54, Pl. V, fig. 3.

tree-rat of India, called *Mus rufescens* by Blyth* and Jerdon,† but greyer and less rufous than that species generally is. The skull is undistinguishable from that of Calcutta specimens. The dried skin measures about 5½ inches from nose to insertion of tail, tail (vertebræ preserved) 6 inches. The colour is greyish brown above, darker on the back owing to the prevalence of longer black-tipped hairs, white below, the edge of the white colour being distinct and well marked.

This rat is found in most parts of India, and *M. robustulus*,‡ of Burma appears to be only a variety. It also abounds in the Nicobar islands where it does much damage in the cocoa-nut trees.§ It is naturally surprising to find this rat in the upper Indus valley together with Central Asiatic types like *Cricetus* and *Lagomys*. Of course I do not mean to say that this long-tailed Indian tree-rat is true *Mus rufescens* of Gray, but the determination of the names of Indian rats and mice can only be attempted after a careful comparison of specimens.

X.—*A Description of some new Species of Hydroid Zoophytes from the Indian Coasts and Seas.*—*By* Surgeon J. Armstrong, *Marine Survey Department.*

(Received 7th May;—read 4th June, 1879.)

(With Plates IX, X, XI, XII.)

With the exception of a single species all the following hydroids are calyptoblastic. The one exception is *Endendrium ramosum*, which is a typical gymnoblastic zoophyte, and is especially remarkable in having the gonophores borne not upon a true blastostyle but upon atrophied hydranths from which the tentacles have disappeared.

Lafoëa elongata, (nov. spec.)

(Plate IX.)

Zoophyte.—Plant-like, gregarious, dark-brown.

Trophosome.—Stems erect, simple, straight or slightly curved, 1 to 2¼ inches high, pinnate, with 3 or 4 transverse annular markings immediately above the origin of each pinna, and rooted by a creeping tubular

* J. A. S. B., 1863, XXXII, p. 340.

† Mammals of India, p. 199.

‡ Blyth, J. A. S. B., XXVIII, p. 294; XXXII, p. 342; see also J. A. S. B., 1878, XLVII, pt. 2, p. 165.

§ Stray Feathers, IV, p. 433.

stolon. The pinnæ are alternate, and each carries on its upper surface a monoserial row of hydrothecæ, they are transversely annulated, both at their origins from the stem and immediately above the origin of each calycle. The hydrothecæ are free, elongated and tubular, annulated at their origins, and with the margin of the mouth even.

Gonosome.—Unknown.

Habitat.—Rocks between high and low water at Pigeon Island, and Konkan Coast on the west coast of India, and at Diamond Island off the Pegu Coast in Burmah.

This very interesting form is certainly a campanularian, while its long tubular hydrothecæ would indicate *Lafoëa* as its proper genus, a genus, however, not very well defined. I have lately had several opportunities of examining this zoophyte in a living condition; the polypites are supported on long attenuated peduncles, and have both disc and tentacles completely extruded from the hydrothecæ, into the cavities of which they are only partially retractile. Although apparently tolerably extended in its distribution, it is very far from being abundant anywhere. It seems to thrive best in those localities most exposed to heavy seas and the influence of the South West Monsoon. This species and another belonging to the genus *Thimaria* are the only representatives of the Hydroid family I have met with during two seasons spent upon the coast of the Ratnágiri and Alíbág Collectorates.

Halicornaria setosa (nov. spec.)

(Plate X.)

Zoophyte.—Stiff, erect, solitary, and of a dark-brown colour.

Trophosome.—Stem bipinnate, more or less irregularly and numerously branched, varying in height from one to five inches, rooted by an entangled mass of short fibrous filaments, and carrying closely set primary pinnæ. The main stem is made up of a fasciculus of three tubes, from the central one of which an alternate series of hydrotheca-bearing pinnæ arises, but the stems of the secondary pinnæ, which are formed of a fasciculus of two tubes, are destitute of hydrothecæ, but carry along their entire length an alternate series of ultimate hydrotheca-bearing pinnæ. The ultimate pinnæ are thus borne not only on the primary pinnæ but also on the stem; they are closely set, alternate, of nearly equal length, and divided by joints into a series of internodes, each of which gives origin to a calycle with its nematophores. The hydrothecæ are deep, flask-shaped, deeply concave in front below the lip, and correspondingly convex behind; the aperture is wide, and has the margin provided with two large lateral teeth, and two smaller ones posteriorly. The

nematophores are three in number, two lateral, which are short, blunt, divergent, and projecting slightly beyond the margin of the hydrotheca; and one mesial, which is remarkable as being provided with a lateral as well as terminal orifice, it is adnate to the base and lower third of the calycle, being free only at its extremity which projects horizontally outwards from the hydrotheca.

Gonosome.—Consists of a number of lozenge-shaped bodies filled with dark granular matter, and pointed at their free extremities; they arise on each side of the primary pinnæ in the intervals between the ultimate pinnæ.

Habitat.—Off Cape Negrais in 80 fathoms. At Cheduba Island in from 8 to 10 fathoms; off the Terrible Islands in 25 fathoms, and off Cape Comorin in 40 fathoms.

This beautiful species is closely allied to *Halicornaria bipinnata* of Allman. It has a very wide distribution, being found at intervals all along the Arrakan and Pegu Coasts, as well as off the South Coast of India. On several specimens which I examined I found the main stem provided with two parallel rows of pellucid dots, the nature of which I have hitherto been unable to determine; they are, however, most probably the optical expression of cauline nematophores. It is also remarkable in having the mesial hydrothecal nematophore provided with a lateral orifice as in *H. saccaria* (Linn. Soc. Journ., Vol. XII.) This species appears to afford a favourite anchoring ground for a small bivalve belonging to the genus "*Vexillum*;" most of the specimens dredged up by me were covered with this species firmly adherent by their byssi and in different stages of development.

Halicornaria plumosa (nov. spec.)

(Plate XI.)

Zoophyte.—Feathery, gregarious.

Trophosome.—Stems one to two inches in height, fascicled towards the base, of a dark brown colour, straight or gently curved, minutely pinnate and rooted by a creeping filiform stolon. The pinnæ arise alternately by jointed processes from the anterior surface of the stem; they are divided by more or less complete joints into a series of short internodes, each of which carries a calycle with its nematophores. The hydrothecæ are unilateral and borne on the upper surface of the pinnæ and sessile; they are cup-shaped and have a large and patulous orifice, the margin of which is deeply denticulated, and is especially characterized by the possession of a single long mesial tooth immediately behind and projecting above the anterior nematophore. The intrathecal ridge passes backwards

from the anterior nematophore across the lower fifth of the calycle and is prolonged into the wall of the pinna. The nematophores are only developed in connection with the hydrothecæ, they are three in number, two lateral and one mesial or anterior; the lateral are short, tubular, free and projecting; the mesial is long, adnate throughout its entire length, except at its immediate extremity, where it is free and slightly projecting.

Gonosome.—The gonothecæ arise singly from the posterior aspect of the stem near its base, they are bell-shaped and have a circular even and somewhat everted margin; the older ones present a more or less annulated or ribbed appearance.

Habitat.—In 35 to 40 fathoms off Cape Comorin, south coast of India, and in from 10 to 15 fathoms off Cheduba Island, coast of Arrakan.

Desmoscyphus humilis (nov. spec.)

(Plate IX.)

Trophosome.—Stems gregarious, not exceeding a quarter of an inch in height, straight, simple, erect, divided by joints into a series of short internodes, each of which carries a pair of calycles, and rooted by a creeping stolon. The hydrothecæ are biserial, opposite, urceolate, the upper half free and tubular, the lower half adnate and sacciform; the aperture is directed upwards and outwards, and has the margin marked by several deep denticulations.

Gonosome.—The gonothecæ are broadly tubular or slightly pyriform and with a simple margin; they are opposite, and arise by short pedicles on each side in the intervals between the calycles with which they consequently alternate.

Habitat.—Saint George's Island on the west coast of India, attached to sea-weed between high and low water marks. This species is evidently referrible to the genus *Desmoscyphus* of Allman. (Linn. Soc. Journal, Vol. XII.) Although many gonangia possess clearly defined peduncles, yet at first sight some often appear to be sessile. This difference, however, is only apparent, for a closer examination shows that they are all pedunculated.

Sertularella rigosa (nov. spec.)

(Plate X.)

Trophosome.—Stems slender, arising at short intervals from a creeping filiform stolon, unbranched, zig-zag, and divided by constrictions immediately above each calycle into a series of rather lengthened internodes each of which supports only one hydrotheca. The hydrothecæ are biserial and alternate, they are broadly tubular, but wider at the base

where alone they are adnate, being narrower at the orifice, which is square, and has the margin produced into four nearly equidistant teeth, they are all more or less deeply annulated or spirally ribbed.

Gonosome.—Unknown.

Habitat.—Off Cape Comorin in 40 fathoms, and off the Arrakan Coast in from 10 to 15 fathoms.

This hydroid bears a very close resemblance to *S. tenella* of Alders, but differs from it in the stem not being twisted at the joints and in the spiral ribbing of the hydrothecæ.

Thimaria compressa (nov. spec.)
(Plate XII.)

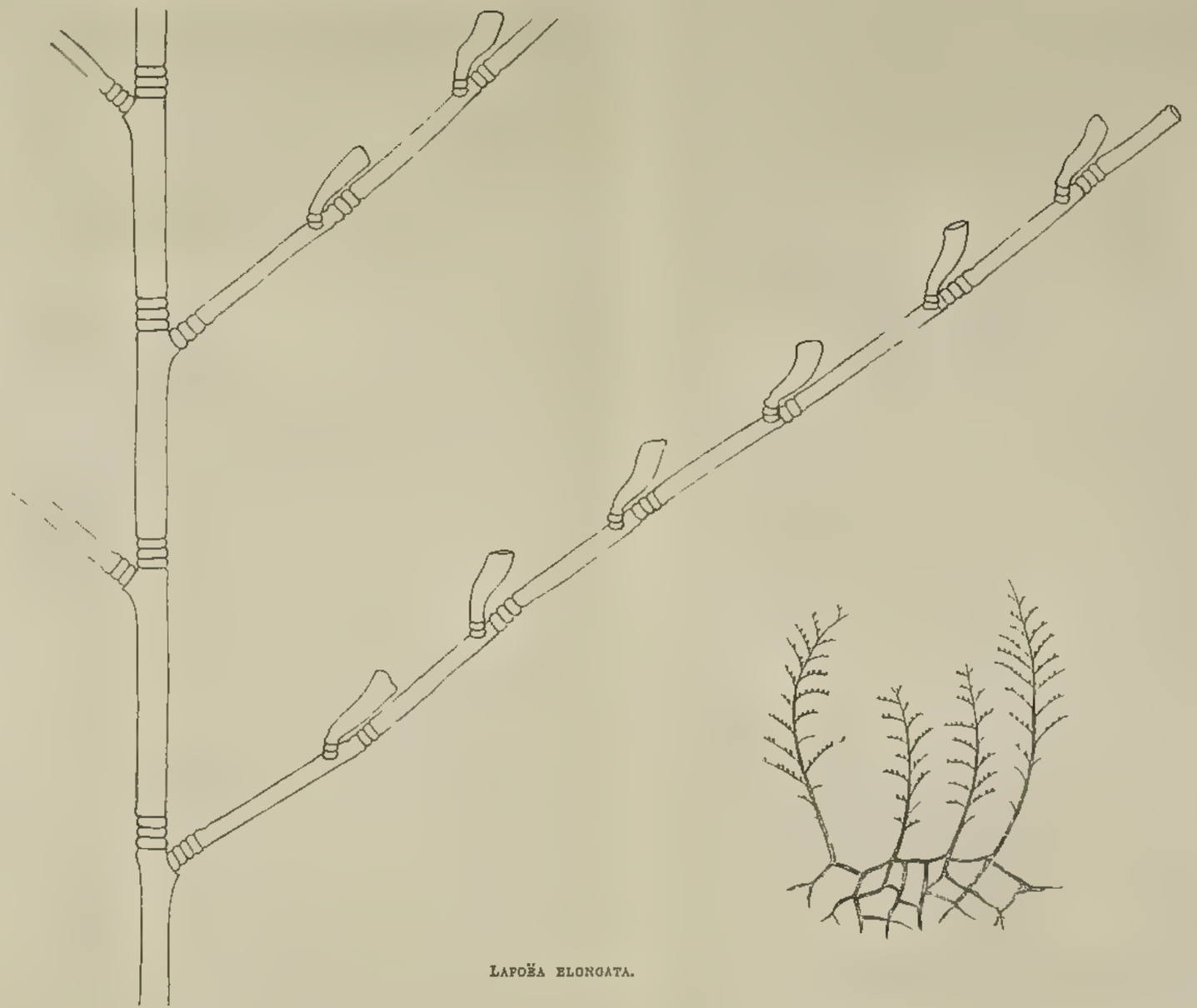
Trophosome.—Stems sparingly clustered, about an inch and a half in height, unfascicled, erect, more or less decidedly zig-zag, rooted by a creeping tubular stolon, and giving origin to a limited number of pinnæ. The pinnæ are alternate, few in number, and arise at regular intervals from the main stem, of which they are for a short part of the commencement of their course mere diverticula, being identical with it in structure, destitute of hydrothecæ, and with two annular constrictions marking the origin of each. The terminal nine-tenths of its length is made up of an aggregation of closely packed subalternate hydrothecæ, which are continued to its termination. Very often, however, the pinna is composed of a linear series of two or sometimes of three of the simple forms above described. The lower half of the hydrotheca is broadly tubular and adnate, the upper half is narrower, free, and projecting horizontally outwards, the aperture is oblique with the lower margin prolonged into a sharp tooth.

Gonosome.—Unknown.

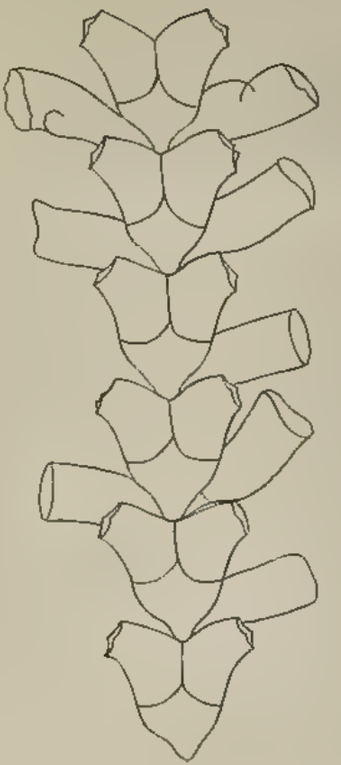
Habitat.—Extremely abundant on the rocks between high and low water at Diamond Island, as well as amongst the laterite rocks on the Konkan Coast. I have also dredged it in 40 fathoms of water off Cape Comorin.

Antennella allmanni (nov. spec.)
(Plate XII.)

Trophosome.—Stems sparingly clustered, very slender, gently curved from base to apex, rooted by a slender filiform stolon, and attaining a height of about half an inch ; they are divided by long, oblique partitions into a series of internodes, each of which carries an hydrotheca and four nematophores. The hydrothecæ are campanulate with large patulous orifices and perfectly even slightly everted margins. The nematophores are four in number on each segment of the stem, two lateral, one inferior and one superior. The lateral nematophores are quite free, long, narrow, and trumpet-shaped with a circular aperture and everted margin, from which they gradually taper down to extremely fine points, which are at-



LAPOËA ELONGATA.



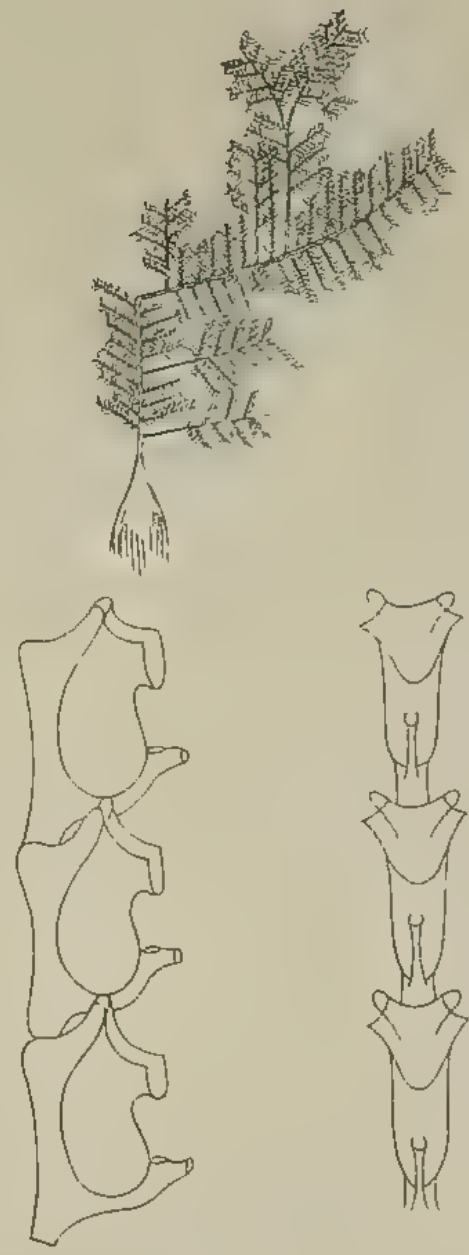


DESMOCYPHUS HUMILIS.

Zincographed at the Surveyor General's Office Calcutta



HALICORNARIA SETOSA.



SERTULARELLA RIGIDA.

Lithographed at the Surveyor [illegible] Office, Calcutta.



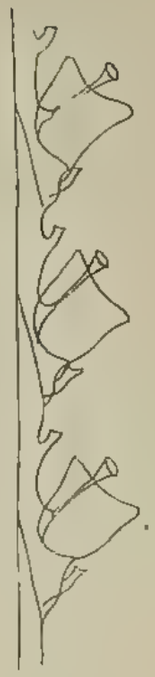
HALICORNARIA PLUMOSA.

Zincographed at the Surveyor General's Office Calcutta





THUMARIA COMPRESSA.







ANTENELLA ALLMANNI.



ENDENDRIUM RAMOSUM.

tached, one on each side, to lateral processes of the stem, by a joint which allows the slightest motion of the water to communicate free vibratory oscillations to the nematophore. The inferior nematophore is free, tubular, much shorter than the lateral, and arising from a tumescent prominence on the stem, slightly below the base of the calycle, is directed upwards towards its anterior aspect. The superior nematophore is somewhat smaller, but in form and direction corresponds precisely with the inferior, it arises on a level with the upper margin of the calycle from the stem, which is here quite even and presents no enlargement similar to that which marks the origin of the lower nematophore.

Gonosome.—Unknown.

Habitat.—Off Cape Comorin in 50 fathoms, and off the coast of Cheduba Island in 8 to 10 fathoms.

Endendrium ramosum (nov. spec.)

(Plate XII.)

Trophosome.—Tree-like, stem much and irregularly branched, attaining a height of 3½ or 4 inches, fascicular and rooted by an entangled mass of short fibrous filaments, the branchlets are more or less dichotomously arranged and are all annulated at their origins.

Gonosome.—Gonophores consisting of clusters of spherical bodies, filled with a granular substance. They appear not to be borne on true blastostyles, but on the bodies of atrophied hydranths from which the tentacles have disappeared.

Habitat.—In 40 fathoms off Cape Comorin, and very sparingly, in from 10 to 70 fathoms, along the coast of Arrakan.

XI.—*Notes on the Formation of the Country passed through by the 2nd Column Tal Chotiali Field Force during its march from Kala Abdullah Khán in the Khójak Pass to Lugárí Bárkhán. Spring of* 1879.—*By* Lieut. R. C. Temple, *1st Ghoorkas.*

(With Map—Plate XIII.)

General Features.—There are one or two features general to the country passed through upon which it would be as well to remark before proceeding to note in detail the formations met with during the various marches.

The Glacis.—The most remarkable feature to be observed all over Southern Afghanistan is the peculiar gradual slope, or *glacis*, leading up

to the foot of the hills which encompass the numerous valleys into which the country is split up. The hills, which are usually bare of trees, of course vary greatly in height and form, but uniformly at foot is this glacis or slope between them and the valley level. It varies, of course, under various circumstances as to length and height, but its presence is invariable. To the west of the Khójak Pass, where the so-called Khója Amrán Range rises some 3000 feet above the valley—the Kadanei—it is about 15 miles long and 1000 feet in height, *i. e.*, the apparent foot of the Range is about 1000 feet higher than the real level of the valley. In the narrower valleys, such as the Gwál near Quetta, which is only 3 to 4 miles broad, the glacis on either side reaches nearly to the middle of the valley. It is generally very stony and covered with detritus from the hills. The streams over it, which are very numerous as a rule, have wide stony beds over which the water rushes with ever so much force, but to no great depth, after every heavy fall of rain. The torrents very quickly dry up, and very few of the streams have even a little water trickling in places from springs in the bed. The larger streams rush down several channels, the higher spots between which seem also to be liable to sudden and violent floods whenever a more than usually heavy fall of rain occurs in the hills above. These facts seem to lead to the hypothesis that the slopes have been formed by excessive denudation going on in the hills in consequence of their bare and treeless condition. But there seems to be another cause. Many of the hills, especially about the Pishin valley, appear to be formed of a slaty shale which is much disintegrated and split up at the surface towards the hill tops. It can be broken, or rather chipped, off easily by the hand, or even by the mere weight of the foot passing over it. The cold at the summits of these bare and exposed hills is intense; the heights being, say 7500 to 8000 feet, and it is possible that denudation is helped by the action of frost which separates the shale chips to be washed down by the next shower; and from the appearance of the hill sides it is probable that large quantities of these chips are in places brought down by every shower.

Metals.—Many parts of the country appeared to me to contain copper and iron in large quantities in the soil, but the specimens sent herewith will probably do something towards proving their presence and in what quantities they occur. There is a small isolated hill in the Dof valley, at the entrance of the Surai Pass, which appeared to me to affect the action of my prismatic compass. I have heard it asserted that gold is to be found in the quartz about the Pishin valley and the Khója Amrán Range, but I cannot say I saw any myself or any quartz likely to be auriferous.

Salts.—The soil in many places is white with nitre or salts of sorts: and this occurs in all parts of the country traversed. The water in many

SKETCH MAP

TO ACCOMPANY

THE GEOLOGICAL SPECIMENS COLLECTED DURING THE MARCH OF THE 2nd COLUMN, TAL CHOTIALI FIELD FORCE,

FROM

KALA ABDULLAH KHAN IN THE KHOJAK PASS

TO

LUGARI BARKHAN

Spring of 1879.

COMPILED BY LIEUT. R. C. TEMPLE, 1st. GHOORKHAS.

Scale 16 Miles = 1 Inch.

16 12 8 4 0 16 32 48 64 Miles

0 1 2 3 4 Inches

REFERENCE.

Line taken by the compiler during the march. . . . . .

Routes taken by the Quetta Column, Frontier Expeditionary Force . . . . . .

Lines taken by 1st and 3rd Columns, Tal Chotiali Field Force . . . . . .

Lines of Roads known to exist, but not traversed . . . . . .

Line of Railway. . . . . .

PHOTOZINCOGRAPHED AT THE SURVEYOR GENERAL'S OFFICE, CALCUTTA, FROM A COPY OF THE ORIGINAL MAP BY LIEUT. TEMPLE,

August 1879.

places, both well and river, evidently holds salts in solution; in some places, as in Sagar and the Trikh Kuram Pass, it is undrinkable from its saltness.

Overgrowths.—One of the most distinctive features of Southern Afghanistan is the want of trees, but this appears to me to be due more to the inhabitants than to nature. In the higher regions, *i. e.*, above 8000 feet, the hills and uplands are fairly wooded with junipers and conifers of sorts, and wherever from various reasons the country is uninhabited, as in the Surai Pass, the Hanumbár Pass and all the land between the Trikh Kuram Pass and the Han Pass the country is fairly wooded with olives, bér and bábul trees with tamarisks and a dwarf palm in the lower and damper grounds. Indeed about the Hanumbár Pass there is a forest of bér and bábul trees. There is, however, another general feature to be observed everywhere after the Bolán and Han Passes are once crossed, the presence of southernwood and camel-thorn, which is universal. Grasses also of sorts flourish in most places, so that it may be presumed that the soil is the reverse of being unproductive were any efficient system of irrigation to be introduced. And it did not appear that water is really wanting in the country if trouble and skill were used in finding it.

Fossil remains.—After Khwára in the Shór valley testaceau fossils abound, and the hills about the Hanokai and Han Passes may be described as being one mass of fossils, some in a wonderfully complete state of preservation, as the accompanying collection will show. They appear to be of the post-tertiary period. The same may be said of the whole country between the Han Pass and the plains *viâ* the Cháchar Pass. I only saw one fossil of an animal which was picked up near Ningánd in the Ghazgai valley. (No. 203.)

Notes en Route.

North Pishin Valley.—Hills apparently of volcanic origin, basalt and shale; quartz is found in layers between the strata which are irregular, faulty, and much folded with dips at great angles. The hills are bare and greatly scoured by water. The Pishin is an open valley about 25 miles long and 20 miles broad.

Kala Abdullah Khán.—The hills about this point are bare and somewhat bleak.

North Pishin to Badwán.—The country along the road is intersected by a series of water channels and torrent-beds carrying down enormous quantities of detritus from the hills to the north of the valley, the land between them being much water-worn, apparently scoured after every shower and liable to sudden and violent floods.

To A'lízai.—Country torrent-scoured and covered with detritus and in places much broken by the wash of the water: soil, light and sandy.

To Khúshdil Khán.—Country near the hills stony, water-washed and covered with detritus: it is intersected by several torrent beds: soil, light and sandy. About the low lands the country much broken and intersected by deep nullahs: soil, clay. The country is everywhere bare of trees.

To Sharan Káréz, N. E. Pishin.—On the glacis country stony and covered with detritus, intersected by torrent beds. Hills apparently composed of slaty shale and slate with layers of schist cropping up. Country about Sharan Káréz much broken.

Surai Pass.—The country is wild and broken, consisting of a series of conical hills of slaty shale and slate, much disintegrated at the surface, probably from the action of ice and frost.

Dof Valley.—This valley is about 15 miles long by 8 broad. The glacis and water-scoured appearance of the country is similar to that observed in the Pishin valley. Soil, light and friable and not so good as in the Pishin valley.

Gwál Valley.—Valley about 20 miles long by about 3 to 4 broad. Country much the same as before: soil, not deep, say 2 to 2½ feet deep over conglomerate, it is very light and friable.

Pinikai Hills.—The hills are apparently of conglomerate and much water-worn. They have the appearance of being formed of the detritus of a lofty range of mountains like the lower hills in the Himalayan Ranges. The soil seems to be strongly impregnated with lime.

Gurkhai Defile.—The defile is of variable width, having high precipitous rocks of sandstone and grey limestone in the narrower places. It is broken up by low conical hills of soft red and grey clay in the wider portions.

Sagar.—The country is excessively wild and broken. Sagar is a kind of valley between high hills, but it is full of small conical hills of clay and in places of soft disintegrated shaly slate. The soil varies greatly in colour; white, grey, yellow and a bright red in the clay and bluish in the slate hills, trees are scarce.

Mosái Pass, gorge of the R. Zadún.—Hills at first of soft shaly clay and ironstone, but in the gorge of the river Zadún they are very similar to those in Sagar, and of red, yellow and grey clays. Afterwards the hills become undulating and apparently are of sandstone.

Gorge of the R. Rod.—High mountainous limestone hills with fairly horizontal strata. The soil about Isaf Kach is sandy.

Ush Pass; Ispira Rágha.—The hills as far as Ispira Rágha seem to be composed of sandstones, clays of various colours, slate and shale,

and lime crystals of sorts abound. The country is fairly wooded with junipers, conifers and bér trees: about the Ush pass it is fairly open; about Ispira Rágha wild and hilly.

Topobargh Pass; Momand.—Country same as about Ispira Rágha. Mómand is an open upland hilly plateau.

Nangalúna Pass and Plateau.—Country about the Pass is hilly, broken and rocky (gneiss). After the Pass the plateau is reached. It is of considerable width, but it is intersected by curious low flat-topped hills running north to south. It is wooded, as before, in the upper heights, but is bare of trees below 8000 feet. The hills appear to be composed of clays and sandstones of sorts with schist and gneiss cropping up in places.

Khwára.—After Khwára limestones begin to predominate and fossils, especially testacean, to abound.

Chimján.—The country is waterscoured, stony and treeless.

Mt. Syájgai.—Mt. Syájgai is a curious isolated mountain in the middle of the Shór valley. It rises about 1000 feet above the valley and almost perpendicularly for the last 300 feet. It is flat-topped, measuring at top about $2\frac{1}{2}$ miles in length by about $\frac{1}{2}$ mile in breadth. It is of limestone and full of fossils even at the summit. Fossils abound also about Chimján.

R. Zaghlun to Pálkai Pass.—The country is here remarkable for five almost parallel lines of hills about one mile to $1\frac{1}{2}$ miles apart enclosing hilly valleys. After these the country to the north is mountainous as far as the Zhób valley, 12 miles. The hills appear to be of limestone with trap in the gorges. The strata are very much broken and faulty.

Shór Valley.—Country much water-worn and very stony. The valley is about 20 miles long and about 5 to 15 miles broad.

Mzarai Valley.—The country much as before, but cut into by deep nullah beds.

Baiánai Pass.—Hills of soft white limestone. Country wild and rugged, much cut into by nullahs which are full of limestone chips from the hills, white, greenish and reddish.

Ghazgai Valley.—Valley 15 miles long by about 5 broad. Country as before, but more grass and overgrowths. Soil, richer than heretofore. Hills of limestone with very folded strata.

Borai Valley.—This valley is, say, 40 miles long and from 8 to 15 miles broad. The soil is good and fertile; there is no water-scour except about the streams; putt and kunker are found in the lower lands. Hills of limestone with very broken strata.

Hanumbár Pass.—Country *en route* various; putt and rough stony water-worn places, especially about the rivers, of which 4 or 5 meet in the Pass, which appears to be the only outlet southwards for some distance

along the hills south of the Borai valley. In the Pass the country is wild, hilly and wooded. There is forest land to the south of the Pass and much grass. The hills are of limestone with much folded strata in which fossils abound.

Sarghar Valley.—At first forest land is met with and then an open putt plain some 10 miles across: the soil is fertile.

Trikh Kuram Pass.—Country wild, hilly and much broken. The hills are apparently of limestone in which fossils and crystal abound. Gypsum crystals show themselves and often they are abundant.

Dérama Valley; Kutsa Valley.—These are grassy upland plains much intersected by stony beds of torrents.

Jarai Tang Pass.—This is a very stony, but short, passage through a hard limestone hill.

Tsamaulang Valley.—Country, putt crossed by deep river channels, but stony in places. The valley is about, say, 40 miles long by about 7 broad.

Hanokái Pass.—The Pass is at first very narrow with precipitous sides through a limestone hill; it then opens into a broader valley which is, say, half a mile wide, but full of low conical hills which in places appear to be formed of disintegrated white limestone, the rock being very friable. Sea-shells not fossilized, especially oysters, were found all through this Pass. Gypsum is abundant, so also are fossils. The hills are of soft limestone, the strata being horizontal.

Jurnái Pass and Valley.—Hills of soft limestone. Country wild and lumpy, and it might be described as being one mass of testacean fossils in a good state of preservation. The same remark applies to the country from this point to the Indian plains, some 150 miles as the road goes. A series of parallel valleys seems to run from the Derama hills to the Jándhrán hills, all more or less resembling each other.

Bála Dháka.—This is an open valley with low rolling hills at the northern end. The general formation of the country seems to be of limestone of more or less hardness.

Hán Pass.—In the Bála Dhákí Pass the rocks are hard limestone and precipitous with broken strata: in the Han Pass the strata are horizontal and the rocks softer, and there is much loose earth and clay full of nummulites and testacean fossils of all descriptions. In fact, the whole, hills and country, is a mass of fossil remains. In the Han Pass the country is wild and lumpy.

Chor Tarap Ravine.—The Chór Tarap ravine is curious. It is a sharply cut, narrow defile in a line of hills from 10 to 30 yards wide and, say, 200 yards long. The sides are full of fossils.

Bárkhán (properly Bárkhóm).—When once the Han Pass is crossed

there is a remarkable change in the country, like the inhabitants, it becomes Belóch in form. The glacis, so remarkable in all parts of South Afghanistan, now disappears and the hills stand out sharp in a flat desert-like valley. The valleys are of putt in which the vegetation is in tufts and has the same character as that observable anywhere in the Belóch plains. The country seems to be of limestone formation and fossils abound everywhere, even in the putt. In the hills the strata as usual are horizontal in some places and much folded and faulty in others.

Cháchar Pass.—The above description applies to the whole country between Bárkhán and the plains. It consists of a series of valleys and mountain ranges of more or less breadth, all of limestones, soft and hard and of all colours. Fossils are abundant everywhere, on the hill sides, in the soil and in the river-beds.

Itinerary.

No. of Stage.	Name.	Distance. miles.	Height above sea level.
	From Kala Abdullah Khán to		
1.	Badwán,	6⅓	5600
2.	Alízai,	19	5500
3.	Khúshdil Khán,	30	5600
4.	Sharan Káréz,	36⅓	6300
5.	Balozai Káréz,	45	6600
	1*st Excursion.* Gwál, 10. m. 6100.		
	2*nd* „ Ámadún 15. m. 6300.		
6.	Ísaf Kach,	54¼	9400
7.	Ispira Rágha,	70¼	7800
8.	Khwára,	83¾	7900
9.	Chimján,	90¼	7400
	3*rd Excursion.* Pálkai Pass 10 m. 8500.		
10.	Baiánai,	112¼	6500
11.	Ningánd,	121¾	5700
12.	Wariágai,	134¼	4900
13.	Sharan,	150¼	4300
14.	Hanumbár Pass,	162¼	3800
15.	Trikh Kuram Pass,	180¾	4100
16.	Tsamaulang,	196¾	4000
17.	Bála Dháka,	207¾	4100
18.	Mitthí Khúin,	223¾	3800
19.	Lugárí Bárkhán,	236¼	3100

XII.—*Notes on a collection of Reptiles and Frogs from the neighbourhood of Ellore and Dumagudem.*—*By* W. T. Blanford, F. R. S., &c.

(Received August 3rd; read August 6th, 1879.)

In the year 1871 I was engaged for some months in the Godávari valley near the first barrier, and in the country between Dumagudem and Ellore. Dumagudem is the station where the Engineers, engaged on the works connected with the first barrier, used to live.

The country is herpetologically but poorly known, and the following list of the species noticed may therefore be an addition to geographical distribution. Nearly the whole tract is covered with thin forest, and the soil is very sandy.

A portion of the collection made has been lost or mislaid, and cannot now be found. The list appended is doubtless very imperfect; several common forms, such as *Naja tripudians*, *Ptyas mucosus*, *Dendrophis picta*, *Lycodon aulicus*, &c., not being included, although they undoubtedly occur. The collection was made in the driest months of the year, from February to May, and the list of lizards is consequently, in all probability, much more nearly complete than that of snakes or *Batrachia*.

REPTILIA.

Chelonia.

1. Testudo elegans.

2. Pangshura tecta var. intermedia, J. A. S. B., XXXIX, 1870, Pt. 2, p. 339. The Godávari form is similar to that found in the Mahánadi. The natives, who eat several kinds of freshwater tortoise, will not feed on this species, as they say it makes them ill.

3. Batagur ellioti? Godávari river.

The only specimen obtained was about 6 inches long. The head was dusky brown with 4 broad blackish indistinct longitudinal bands on the nape and back of the neck. Legs dusky grey. Claws pale yellowish.

4. Trionyx sp.? Godávari. My specimens are not now available for comparison, but Dr. Anderson tells me he believes the species to be *T. leithi*. It is probable that more than one species are found in the Godávari. The only specimens of *Trionyx* obtained by me were young individuals. They were olive in colour with 4 ocelli on the back, white beneath, nape ferruginous with violet streaks. Tubercles on the carapace rather large.

Some individuals of *Trionyx* or one of the allied genera grow to an enormous size. I was assured that a freshwater turtle 6 feet long was caught in the Godávari by the Captain of one of the river steamers. I cannot answer for

the accuracy of the measurement; a foot or two may have been thrown in. But I once saw, on the Indus, a very large individual belonging to some species of the *Trionycidæ* basking on a sandbank. I was on a steamboat, and the turtle took refuge in the water before the vessel was sufficiently near to enable his dimensions to be accurately estimated, but my impression was, that the carapace could not have been much less than 5 feet long, and it might well have been more.

5. Emyda vittata. One specimen was obtained on the 13th March in forest, far from water. This individual probably came from a tank that had dried up. Other specimens were procured from the Godávari river. None exceeded about 5 inches in length, and in all, the odd osseous plate in the middle of the sternum was concealed, if present. I did not, however, macerate or dissect a specimen, and I have none remaining now to examine.

Crocodilia.

6. Crocodilus sp. I do not know what is the species common in the Godávari, as I never had an opportunity of identifying a specimen. It is by no means improbable that more than one species occur in the river.

The Gharial is not found in the Godávari, nor, so far as I know, in any of the rivers of the Peninsula further South; nor is it found in the Nerbudda or Tapti. It is common, however, in the Mahánadi of Raipur, Sambalpur and Orissa.

Lacertilia.

7. Varanus lunatus. I twice obtained specimens of this monitor, or at least of a species which I believe to be *V. lunatus*,* in the country north of Ellore. The largest, a male, measured 23·5 inches, of which the tail from the anus was 14·5. There were about 110 cross rows of scales from the gular fold to the loin. The following is a description of the fresh colouration. Above brownish olive, with irregular cross rows of minute whitish spots on the back, passing into ill-marked cross bands behind. Tail dark near tip, the anterior portion somewhat irregularly spotted with dusky. Limbs finely dotted with yellow, the spots on the hind limbs surrounded with dusky. Lower parts irregularly mottled with yellow and pinkish brown. There is a tendency to ocellation on the side behind the shoulder. The dark colour of the upper parts passes gradually into the paler tints of the lower. Iris yellow, pupil circular. The reversed V-shaped dark cross bands, on the neck, supposed to be characteristic of *V. lunatus*, were not observed. This species is purely terrestrial, so far as my observations go, and lives in holes at the roots of trees, and in similar places far from water. It is diurnal in its habits.

* See following paper on Ajmere Reptiles.

8. Cabrita leschenaultii, (J. A. S. B., XXXIX, 1870, Pt. 2, p. 345). Not rare in the dry forests on the Godávari. I find I was in error after all in supposing that *C. leschenaultii* and *C. brunnea*, are distinct; (see Günther P. Z. S., 1875, p. 225, and some notes by myself, P. Z. S., 1876, p. 635).

Up to April the only individuals I observed were adults, but in that month I found great numbers of young. These are coloured much like the adult, but the tints are brighter, and the distal portion of the tail is light orange, the head shields are quite smooth, not corrugated as in older individuals, and there were two post-nasals in all the specimens I examined under 3 inches in length. Afterwards, in May, I obtained many rather more grown, from $3\frac{1}{2}$ to $4\frac{1}{2}$ inches long, with but one post-nasal. As I was moving about, and procured specimens from different localities, this distinction may have been local and not due to age, but it is evident that the character of having one or two post-nasals is of no specific importance. The same variation is found in the nearly allied genus *Ophiops*.

The rugosity of the head plates appears to be a generic character of *Cabrita*.

9. Cabrita jerdoni, (Beddome, Mad. Monthly Jour. Med. Sci., January 1870, p. 34; Günther, P. Z. S., 1875, p. 225; W. Blanford, J. A. S. B., 1870, Pt. 2, p. 348; P. Z. S., 1876, p. 635). Dr. Günther supposed that this was the same as *Ophiops jerdoni*, but, on my sending him a specimen of the *Cabrita*, he saw, of course, that the two were quite distinct, and that he had been misled by an erroneous label.

C. jerdoni is common in the forests on the Godávari, more so I think than *C. leschenaultii*. I did not meet with *Ophiops microlepis*; it appears to be a northern and western form. (P. A. S. B., 1872, pp. 72, 74.)

10. Euprepes (*Tiliqua*) carinatus.

11. Euprepes (*Tiliqua*) macularius. (J. A. S. B., 1870, Pt. 2, p. 358; Stoliczka, J. A. S. B., 1872, Pt. 2, p. 117; P. A. S. B., 1872, p. 75.) As indicated by myself and much more clearly shewn by Dr. Stoliczka, there are two well marked varieties of this scinque, so well marked, indeed, that it is almost a question whether they should not be distinguished. The one is more slender, and more uniformly coloured above and on the sides, the other is stouter, with the posterior part of the dorsal surface distinctly spotted with black and the sides punctulated with white. In the former there are, as a rule, seven keels on each of the dorsal scales, on the latter five. The former is true *E. macularius* of Blyth, the latter, for the sake of distinction, may be called *E. macularius* var. *subunicolor* or *E. subunicolor*,* ac-

* E. macularius *var.* sub-unicolor *a typo differt dorso, lateribusque parum vel haud maculatis, formâ graciliore, scutis dorsalibus plerumque quinque-carinatis.*

cording as the distinction is considered specific or not. For the present I am by no means satisfied that the two forms do not pass into each other too gradually to render it desirable to accord them specific rank, but as one, the smaller more uniformly coloured variety, is typical of the drier climate of the Central Provinces, whilst the more highly coloured form is found in Lower Bengal, and to the eastward, some distinction in name is useful.

In the comparatively dry forests on the Godávari around Dumagudem I met with the var. *subunicolor*, whilst the typical form was obtained nearer to the sea coast in the vicinity of Rájámahendri.

It is easy to understand how naturalists who have seen but few specimens may mistake these scinques for the young of the common and very variable *E. carinatus*. A comparison of the two, however, will shew the difference. The young of *E. carinatus* has but three keels on the dorsal scales, the back is unspotted and there is a well marked pale whitish line from the superciliary region down each side of the back.

The breeding season and colouration are different in *E. carinatus* and *E. macularius*. In the former the breeding season on the Godávari appears to be March. The colouration is probably confined to the male, but I can find no notes on the sexes of the specimens examined. The colour has already been described by me (J. A. S. B., 1870, Pt. 2, p. 357). When most fully developed the lower parts are rich gamboge yellow with a broad scarlet band on each side of the abdomen from shoulder to thigh.

E. macularius breeds in May, and towards the end of that month I captured richly coloured specimens between Dumagudem and Rájámahendri. In these the deepest seasonal tints were on the sides of the neck and breast. A scarlet band covered the lower labials and extended to the upper labials and rostral; it became very broad beneath the ears, and more broken and patchy behind, but it was traceable as far as the thigh. In less fully coloured individuals the red colouration did not extend behind the shoulder. All the lower parts had a slight reddish tinge, but no trace of the bright yellow of *E. carinatus*.

12. Riopa albopunctata.

13. R. hardwickei. Both these species were obtained on the Godávari, but neither appeared to be very abundant.

14. Hemidactylus subtriedrus. See Stoliczka, J. A. S. B., 1872, Pt. 2, p. 93. Near Ellore.

15. H. maculatus.

16. H. leschenaultii. P. A. S. B., 1871, p. 173; Stoliczka, J. A. S. B., 1872, Pt. 2, p. 97.

17. H. GIGANTEUS, Stoliczka, J. A. S. B., 1872, Pt. 2, p. 99; Günther, P. Z. S., 1875, p. 226; W. Blanford, P. Z. S., 1876, p. 636.

Of these species of *Hemidactylus* I made over my specimens to Dr. Stoliczka for description. Dr. Günther considers *H. giganteus* a variety of *H. coctæi*, but I have shewn that, so far as Indian specimens of the latter are concerned, there are well marked distinctions.

18. SITANA PONDICERIANA. The smaller race only. I saw none with the brilliant colours of the gular appendage developed up to the end of May; the colouration being, as has already been noticed, (J. A. S. B., 1870, p. 366,) purely seasonal, at all events in the smaller race.

19. CALOTES VERSICOLOR.

20. CHARASIA BLANFORDIANA, Stoliczka, J. A. S. B., 1872, p. 110. Without a much better series for comparison than I possess, I am not prepared to say whether this northern form can be distinguished from the southern race with rather smaller scales found in Mysore and further south. Specimens from the neighbourhood of the Godávari have about 100 scales round the middle of the body. Common on rocks.

21. CHAMÆLEO CEYLONICUS. Common.

OPHIDIA.

22. TYPHLOPS BRAMINUS. On two occasions I found great numbers of this blind snake in decayed wood; in one case there must have been at least a hundred in one fallen tree. None exceeded $5\frac{1}{2}$ inches in length. No other species of *Typhlops* was observed.

23. ONYCHOCEPHALUS ACUTUS.

24. OLIGODON SUBGRISEUS? The only important distinction from the description of this species shewn by the single specimen collected consists in the presence of two præoculars instead of one. The following is a description of the snake.

Scales of body smooth, in 15 rows. Ventrals 185, anal divided, subcaudals in 40 pairs. Length $17\frac{3}{4}$ inches, of which the tail was $2\frac{1}{4}$.

Seven upper labials, 3rd and 4th entering the orbit; 2 præ- and 2 post-oculars; a small square loreal.

Colouration, when fresh, light yellowish brown above, with a narrow pale line along the middle of the back from head to tail, and two broader pale lines, each as wide as two scales, down each side from head to anus; below these is a narrow dark line, then pale again. There are rudimentary cross-markings on the back, due to rows of scales with black margins alternating with other rows that are white-edged. On the head the markings are faint, a dark cross-band from eye to eye, edged behind with whitish,

and a double rather broad V-shaped mark, with the angle directed forward, on the vertical and occipitals.

25. Simotes russelli. One young specimen only.

26. Ablabes humberti, var. (P. A. S. B., 1871, p. 174). Several specimens were obtained, in the neighbourhood of Ellore, of a small snake, only differing from South Indian specimens of *A. humberti*, in the number of ventral shields. To this variation I called attention in the short paper above indicated. The following is a description of the fresh colouration in the snake from Ellore.

Back pale coppery, sides lilac grey, lower parts very pale apple green; a series of small black dots along the middle of the back, at rather irregular intervals, from 2 to 5 scales apart, and two other lateral rows, one on each side of the ventral scales, consisting of a black dot on the side of each scale. An imperfect very narrow black streak runs down each side of the back. Head above mostly black, with a narrow yellow collar across the neck 7 scales behind the occipitals; this collar becomes broader at the sides. There is a patch of duskier yellow behind each occipital, the two patches separated by a central black line; from each patch a white band leads down to the upper labials. A white band runs along the upper labials and rostral, extending all round the upper jaw, and another runs from the rostral to each superciliary shield. Loreal region black. Each of the lower labials and chin shields with a white patch, bordered by black, anterior ventral shields with partial dusky margins. The specimen described was 10·5 inches long, the tail being 1·9. Ventrals 211, anal bifid, subcaudals in 56 pairs. In another specimen 13¼ inches long there were 209 ventrals. As was pointed out in the note already quoted, there were only 155 ventrals in a specimen from Malabar, 175 in one noticed in Günther's *Reptiles of British India*, p. 228, and no less than 240 in a Calcutta example. So great a variation in the number of ventral shields might indicate that several species are included, but there appeared no other constant difference in the specimens, and I may add that Dr. Stoliczka, who also examined them, agreed with me in classing all as varieties of one species.

27. Zamenis fasciolatus. A young specimen only, but one of the fiercest snakes I ever captured.

28. Tropidonotus stolatus.

29. Cerberus rhynchops, abundant in the salt water inlets and estuaries near Coconada, living in holes in the mud between tidemarks. A very gentle snake, not biting when handled.

30. Dipsas trigonata. The colouration varies in this snake. The specimen obtained had the head markings different from those described by Günther and on the back were irregular transverse whitish bands with

broad black edges; the median line being deficient, as in the specimens from Agra mentioned by Dr. Stoliczka, (J. A. S. B., 1870, p. 142).

31. Gongylophis conicus. Two specimens were obtained on the Godávari, they were very gentle and slow in their movements, like *Eryx*. One had swallowed a mouse. In a specimen 20 inches long, of which the tail measured $1\frac{1}{2}$, there were 168 ventral scales and 18 subcaudals; the upper labials were 14, not 12. The colour was dark brown, with the blotches light brown in the middle and yellow on the margins.

32. Daboia russelli.

33. Echis carinata. This was obtained on two or three occasions in forest,—rather thin forest it is true,—but it is remarkable to find a desert form like *Echis carinata*, so common in the barren plains and rocky hills of South-Western Asia, in a wooded country.

AMPHIBIA.

1. Rana tigrina.
2. R. lymnocharis.
3. R. cyanophlyctis.
4. Pyxicephalus breviceps.
5. Bufo melanostictus.
6. Polypedates maculatus.

7. Callula variegata, Stoliczka, P. A. S. B., 1872, p. 111. I obtained altogether five specimens of this species, from under logs of wood, near a village between Dumagudem and Rájámahendri. In size they varied from 1·1 to 1·35 in the length of the body, and the hind limb ranged from 1·23 in the smallest to 1·48 in the largest example. Four were under one log, one under another, and in each case the toads associated with a large scorpion, and tried to escape into his burrow when the log was lifted. They can hop but very feebly indeed. The body in life is extremely soft and slimy. The colour above, in the living animal, is dark brown, spotted with pale greenish or yellow, the spots are usually minute on the hinder part of the body and on the limbs, but form larger blotches on the back. The lower parts are dull flesh-colour.

XIII.—*Preliminary Notice of a new Genus* (Parectatosoma) *of* Phasmidæ *from Madagascar, with brief Descriptions of its two Species.*—*By* J. Wood-Mason.

The interesting and remarkable animals briefly noticed below formed part of a large collection of insects, chiefly Coleoptera, recently received in London from Madagascar, and I was fortunate, while at home on furlough, to secure specimens of them from Mr. E. W. Janson, the well-known Natural History Agent.

They are unquestionably nearly related to *Ectatosoma*, an Australian genus, the three known members of which are three of the most curious and striking forms comprised in the whole class Insecta. This relationship I have indicated in the name of the new genus which the differences presented by these insects compel me to propose for their reception.

Parectatosoma,* gen. nov.

Closely allied to the Australian genus *Ectatosoma*, but differing therefrom in the following characters:—the prothorax is relatively longer and more spiny; the male is devoid of ocelli, and, like the female, brachypterous; the abbreviated tegmina in both sexes are shorter than the abbreviated wings; and the upper crest of all the femora is produced into a sharp genual spine.

Of the species of the Australian genus, *Ectatosoma bufonium*, Westw., is the one which the Madagascar forms most nearly approach.

1. *Parectatosoma hystrix*, n. sp.

♂ ♀. Head armed with 12 spines (besides scattered spinules) arranged in four longitudinal rows and in pairs, of which one is large, compressed, and thorny, and constitutes the conspicuous cephalic horns; the pair of spines immediately in front of these is also compound, each being provided with a sharp spine-like cusp in front. The postantennary pair of spines is as well-developed as in *Ectatosoma*.

Sides and upper surface of prothorax strongly armed with thorns, some of which are double. The apices of the small tegmina barely reaching the bases of the wings, the true metanotum is consequently exposed and it is armed at the middle of its hinder margin with a pair of stout thorns. The tergum of the 1st somite and the terga of more or fewer (according to sex) of the remaining abdominal somites provided at their hinder extremities with two cross rows of spines. Posterior margin of tergum of last abdominal somite in the ♀ symmetrically divided into six spinous processes.

* From παρά, by the side of, and *Ectatosoma*, generic name.

Colour—deep black-brown, almost black, blotched with yellow, sparingly so on the undersurface and legs, but more profusely on the pronotum and on the terga of the abdominal somites, on which parts the colour assumes an orange tinge and extends to the points of the spines; the antennæ are ringed at the joints with the same colour; organs of flight, greenish yellow, with their bases and principal nervures black.

♂. Length of body 61 millims., of head 7, pronotum 5, mesonotum 14, metanotum 7, abdomen 25 + 7 = 32, tegmina 2·5, wings 8, fore femur 17, tibia 17·25, intermediate femur 13·5, tibia 15·5, posterior femur 17, tibia 21, antennæ 53.

♀. Length of body 86 millims., of head 10, pronotum 7, mesonotum 18, metanotum 10, abdomen 31·5, + 12·5 = 44, tegmina 4·5, wings 10·5, fore femur 19, tibia 20, intermediate femur 16, tibia 18, posterior femur 21, tibia 25, antennæ imperfect.

Hab.—3 ♂ and 3 ♀ from Fianaràntsoa; and 1 ♀ from Antanànarìvo, Madagascar, differing from the rest only in being much more variegated.

2. *Parectatosoma echinus*, n. sp.

♂ ♀. Slenderer, and less numerously and less strongly spined than the preceding. Head armed: ♀ with 10 spines besides spinules, the cephalic horns more foliaceous and more sharply spined, with only one pair of spines in front of them instead of two and that simple: ♂ with 8 only, one of the lateral pairs not being developed. Postantennary spines reduced to minute tubercles. Vestiges of wings and tegmina larger, those of the latter overlapping one another, and those of the former so as to conceal from view all but about one square millimetre of the unarmed metanotum. The tergum of the 1st abdominal somite with but one row of spines at its hinder end; that of the terminal somite ♀ divided at its posterior margin into four spinous processes.

Colour—body brown like rotten leaves, with the legs, antennæ, organs of flight (which have their principal nervures darker), and spines lighter.

♂. Length of body 64 millims., head 4·5, pronotum 4·5, mesonotum 14, metanotum 6, abdomen 27·25 + 8·5 = 35·75, tegmina 3·75, wings 7·3, fore femur 17, tibia 17, intermediate femur 12·5, tibia 13·5, posterior femur 17·5, tibia 19·5, antennæ 47.

♀. Length of body 80 millims., head 7, pronotum 6·5, mesonotum 16·5, metanotum 8, abdomen 31 + 12 = 43, tegmina 6, wings 11, fore femur 16·6, tibia 17, intermediate femur 12·5, tibia 13·6, posterior femur 18, tibia 21, antennæ 43·5.

The fore legs and all the tibiæ in the male of this species are nearly quite simple.

Hab.—1 ♂ and 2 ♀ from Fianaràntsoa.

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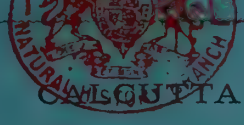
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No. III.—1879.

XIV.—*Notes on a collection of Reptiles made by* Major O. B. St. John, R. E., *at Ajmere in Rájputána.*—*By* W. T. Blanford, F. R. S., &c.

(Received and read August 6th, 1879.)

The following is a list of the reptiles obtained by Major St. John in the neighbourhood of Ajmere during about three years of residence. Most of the species were identified by the discoverer, but nearly all were sent to me for comparison. The list is small, and the fauna of the country is evidently poor, but still all local lists of this kind are of importance, especially if they approach completeness, as they afford very valuable aid towards a knowledge of distribution. In this list, for instance, I find that two species occur, *Cynophis helena* and *Python molurus*, belonging to two genera the existence of which in any part of Central or Northern India I previously thought extremely doubtful.*

The species marked with an asterisk are inserted from information sent to me by Major St. John, as I have not seen specimens. All others have been examined by myself.

*1. Testudo elegans.

*2. Crocodilus, sp. Major St. John writes: "Crocodiles *(C. palustris*, I suppose) are very numerous in the natural lake of Pushkar (or Pohkar) 6 miles from Ajmere. Some are also found in the artificial lake at Ajmere called the Anaságar; they are said not to breed there, but to

* Ann. Mag. Nat. Hist., October 1876, Ser. 4, Vol. XVIII, p. 292.

find their way over the ghat from the natural lake. I cannot hear of the existence of Crocodiles elsewhere in these parts, though they are found in a small tank in the Chittore hill fort, 100 miles to the south."

I identified the species found in Sind with *C. palustris*, and it is not improbable that the Ajmere crocodile may be the same. We are badly in want of a careful collection and comparison of Indian crocodiles; small specimens 2 or 3 feet long would be of service.

3. Varanus lunatus?

Three young specimens have been sent to me by Major St. John; they are respectively 19, 14 and 8½ inches long. In the first I count 114 scales from the gular fold to the loin, in the second 98, in the third 104. Owing to the irregularity of the anterior scales, the number is not quite constant, but having counted the rows in each case two or three times, I only find a difference of one or two.

The colouration is also different in all three. The largest specimen is much darker than the others; yellowish brown in spirit, with small black spots more or less regularly arranged in transverse lines on the back, and narrow blackish cross lines on the neck. A few white spots, generally very small, are scattered quite irregularly over parts of the back, sides, limbs and tail. A black line from the back of the eye over the ear to the side of the nape.

The next specimen is paler yellowish brown, with cross rows of small white ocelli alternating with rows of dark spots throughout the back, and with somewhat irregular broad bands on the tail. The black line from behind the eye is less distinct.

In the smallest specimen, the ground colour is still paler, numerous dark bands cross the back and alternate with rows of minute white dots: on the tail the dark bands form rings, and are much broader than on the back; on the back of the neck the dark lines are V-shaped, the angle being directed backwards. The dark marks running back from the eyes meet on the nape, and form the first cross band. There are imperfect dark cross lines on the chin and throat.

The question arises to which species these monitors should be referred. *Varanus flavescens* and *V. nebulosus* are quite different, and it is clear that the Ajmere specimens, if they belong to a described form, must be either *V. dracæna* or *V. lunatus*. The distinctions between these species are variously described by different naturalists. Gray's original description of *Varanus lunatus*, in the *Catalogue of the Specimens of Lizards in the Collection of the British Museum* (1845) p. 10, runs thus:

"Nostrils large, nearly central, (*i. e.*, between the eye and muzzle,) shields over orbit small, subequal; dark brown, with lunate bands, directed backwards on the neck

and forwards on the body, and with cross bands on the tail; belly and under side of tail whitish."

While *V. heraldicus*, as Gray called *V. dracæna*, was thus described:

"Black with cross rows of pale-eyed spots, beneath pale, black-banded; shields over the orbits small, subequal."

The distinction, it will be seen, depends solely on colouration, and I may add that the colour assigned to *V. dracæna* is not that of a typical example by any means. In Günther's "*Reptiles of British India*," the differences are far better explained. *V. dracæna* is said to have the ventral scales in 90 transverse series between the gular fold and the loin, and the neck without angular dark cross bands. In *V. lunatus* the ventral scales are said to be in 105 transverse series, and the neck to be marked with dark angular cross bands, their points being directed backwards. The following is the description of the colouring of *V. dracæna*:

"Brownish olive, uniform or generally with more or less numerous black dots, each of which occupies a scale; these dots are sometimes arranged in irregular transverse series and are most numerous on the throat: young specimens shew numerous small white ocelli edged darker, whilst the lower parts are marked with irregular dark transverse bands."

It is mentioned that a young specimen from the Anamullay mountains (probably from the base, not the top of the hills) shews narrow black bands across the neck, "but they are much narrower than in *V. lunatus* and rather irregular." The colouration of *V. lunatus* is said to be—

"Neck, trunk, and tail marked with cross bands, which are as broad as the interspaces of the ground colour; these bands are angular on the trunk and neck, with the angle directed backward on the neck and forwards on the trunk—four on the neck, eleven on the trunk. Sides and legs dotted with white."

The single specimen in the British Museum, from which Gray's and Günther's description was taken, is stuffed and 25 inches in length, so that it is not in all probability full grown. It is said to have come from India, but no further information is available as to the locality. I examined this skin some years ago, when comparing the specimen from Baluchistan described in *Eastern Persia*, Vol. II, p. 360, but I could detect no character to be added to those noticed by Günther.

The matter remained thus till ten years ago. Then Carlleyle stated that both *V. dracæna* and *V. lunatus* occurred commonly near Agra, and that neither of them were "water-lizards." (J. A. S. B., 1869, Pt. 2, p. 195.) Next Jerdon (P. A. S. B., March, 1870, p. 70,) stated that he found *V. lunatus* in the Museums at Delhi and Lahore. Anderson, (J. A. S. B., 1871, Pt. 2, p. 30,) recorded the receipt, by the Indian Museum, of *V. dracæna* from Calcutta, Agra, the Khási Hills and Assam, and of *V. lunatus* from Agra and Goalpara (Assam). Dr. Stoliczka identified

the species found in Kachh with *V. dracæna* (P. A. S. B., 1872, p. 73,) and I similarly referred a Baluchistan specimen to the same species.

Lastly Theobald, in his "*Descriptive Catalogue of the Reptiles of British India*," 1876, p. 38, does little more than copy Günther's characters, but gives the additional localities subsequently recorded. In his Synopsis, at the end of the volume, he distinguishes *V. dracæna* as having the body black dotted, and *V. lunatus* as having the same yellow dotted; a distinction, I may at once add, with which I am unable to coincide.

So far as I know, no other specimen having the peculiar colouration exhibited by the type of *V. lunatus* has been observed. The colouration, of the neck especially, is peculiar and is shewn in Günther's plate. All who have endeavoured to discriminate the species in India have, I think, depended on the number of rows of ventral scales, specimens with less than about 95 rows (or to speak more correctly about 70 to 75 rows on the abdomen, and 20 to 25 scales less regularly arranged on the breast) have been referred to *V. dracæna;* those with 100 or more to *V. lunatus.* Stoliczka, however, referred Kachh specimens with 90 to 100 rows to *V. dracæna,* and I myself, after comparing a specimen from Baluchistan having 107 rows with the series in the British Museum, came to the conclusion that it must be classed with the same species. At the same time I expressed a doubt whether *V. lunatus* was more than a variety of *V. dracæna.*

On the other hand there is considerable reason for believing that the common *Varanus dracæna* of Bengal and Assam is a water lizard, inhabiting marshy places and entering the water freely like *V. flavescens.* The monitors of the North-West Provinces of India, of parts of Southern and Western India are purely terrestrial, as has been noted by several observers. Many of these terrestrial lizards have been classed by various writers as *V. dracæna,* and the question arises whether two species have not been confounded under this name. A second question is, whether the terrestrial lizard is not *V. lunatus.*

In the hope of determining this point, I examined all the Indian Museum specimens, which Dr. Anderson kindly placed at my disposal. The result is far from decisive, but it does appear probable that two well marked forms exist, the one inhabiting Bengal and Assam, the other ranging through the greater portion of the Indian Peninsula. The number of ventral scales is not sufficiently characteristic to serve as a distinction, although the form from the North West Provinces and Western India has decidedly smaller scales, both above and below, than the Eastern race. Indeed I have sought in vain for any well-marked character to distinguish these two. So far as I can see, the adults are easily discriminated by

colouration, and by the form of the dorsal scales. Assuming that the western form is *lunatus*, the following appear to be the distinctions.

V. dracæna. Back more rounded, and head higher. Scales throughout larger, the dorsal scales surrounded by granules, the central boss very convex, much longer than broad. The fold above the shoulder and along the side often ill-marked, and in old specimens wanting.

Colouration dusky yellow to greenish olive thickly speckled with black. In the young the dark transverse bands are broad, nearly equal to the interspaces.

V. lunatus? Back nearly flat, and head lower than in *V. dracæna.* Scales throughout smaller, notably so on the labials, and as a rule on the supra-orbital regions. The dorsal scales in adults surrounded by a broad band of granules, the central boss nearly flat, but little longer than broad. The fold above the shoulder running back nearly to the thigh, and forward on the side of the neck, well marked in young specimens, and as a rule in adults.

Colouration brownish olive to yellowish brown. Adults almost uniformly coloured or thinly dotted with black on the upper parts. In the young the transverse bands are narrower than the interspaces (the very young are indistinguishable, however, from those of *V. dracæna).*

It is not certain that the latter species is the true *V. lunatus*, but as that form has smaller scales than the typical *V. dracæna*, the monitor above described may be referred to it. Even now I am far from convinced that the two are absolutely separable

Varanus lunatus (if this be correctly identified) is common near Ajmere.

4. Ophiops microlepis. (J. A. S. B., 1870, Pt. 2, p. 351; 1872, Pt. 2, p. 90; P. A. S. B., 1872, p. 74.) This seem rather a widely-spread form. The present is the fourth locality noticed, the others are Bilaspur in the Eastern Central Provinces, Karharbári in Western Bengal, and Kachh.

5. Euprepes guentheri.

E. monticola, Günther, *Reptiles of British India*, p. 80, Pl. X, fig. C.—Stoliczka, J. A. S. B., 1872, Pt. 2, p. 120.—Theobald, *Desc. Cat. Reptiles Brit. Ind.*, p. 52.

Few people can be more loth to change a name which has subsisted for a considerable time than I am, but I think that this is clearly one of the cases to which the British Association rule, § 11, applies. That rule runs thus:—"A name may be changed, when it implies a false proposition which is likely to propagate important errors." Now the name *monticola* does imply a false proposition, for it indicates that the species so called is a

mountain form ; Dr. Günther's information led him to suppose that this scinque inhabited Sikkim at an elevation of 8000 feet. Whence his information was derived is not mentioned, but Dr. Stoliczka was probably correct in attributing it to the Messrs. v. Schlagintweit, whose inaccuracy in these matters is notorious. Since the species was described, Sikkim has been searched by numerous collectors, but not a single specimen of this *Euprepes* has been found. Dr. Stoliczka noticed the improbability of this form occurring in the highlands of Sikkim, where not a single reptile found in the plains of India is known to occur, but he suggests that the specimens may have been procured in the warm valleys. It appears, however, that this scinque is an inhabitant of the dry parts of India. Major St. John has sent it from Ajmere, Mr. Theobald records it from Kálka, at the base of the barren lower Himalayas of the Punjab, and I have met with it in Upper Sind.* Now the fauna of the dry plains of Upper India is widely different from that found in the moist Sikkim valleys, and the only reptiles common to the two are a few species of enormous range, such as *Calotes versicolor* or *Naja tripudians*. I believe, therefore, that *Euprepes monticola*, like *Eryx Johnii* and *Gongylophis conicus*, owes its supposed Sikkim locality solely to an incorrect label, and therefore the retention of the name *monticola* "tends to propagate an important error." Under these circumstances I propose to re-name the species after the original describer, Dr. Günther.

Two specimens of *E. guentheri* have been sent by Major St. John ; they agree with Dr. Günther's original description in all essential particulars, and still better with Dr. Stoliczka's. There are 35 or 36 scales round the body, the dorsal scales have two keels, sometimes with a faint third keel between the two stronger ridges ; lateral scales with three keels.

E. guentheri is, according to Major St. John, common near Ajmere. It lives under bushes on the hill sides and in sand.

6. Hemidactylus triedrus, *(? subtriedrus)*. (Stoliczka, J. A. S. B., 1872, Pt. 2, p. 93.) The only specimen procured was caught on Táragarh, close to Ajmere. There are unfortunately no specimens for comparison from Southern India in the Museum at Calcutta, and I have no longer those procured near Ellore. In the individual from Ajmere, as in those from Ellore, none of the trihedral tubercles is quite as large as the ear opening. The specimen is, unfortunately, a female, and has no femoral pores. The following are the principal characters.

Back with closely set trihedral tubercles, those in the middle a little

* I have also received from Mr. Wynne a specimen of a scinque procured in Hazára, and probably belonging to this species, but not in sufficiently good preservation to be identified with certainty.

longer than broad and arranged in longitudinal lines, those on the sides broader than long, not very regularly placed. Head above granular, with numerous small round tubercles. Tail with cross-rows of trihedral tubercles above, and broad plates below. Eight upper labials, seven lower; the nostril is separated from the first labial, but is in contact with the rostral; the plates behind the rostral are small; one pair of large chin shields only; about 34 scales across the abdomen. Scales below head and throat and those beneath the feet very small.

The general form is similar to that of *H. triedrus*, as represented in Belanger's "*Voyage;*" the head large and depressed; body stout. The length of the specimen is rather more than $2\frac{1}{2}$ inches from nose to anus, the tail, renewed in parts, is 2 inches long.

Colouration in spirit light brown above, with, on the body, 5 broad transverse yellow, black-edged bands, the margins of which are wavy; the first on the nape without a black edge in front, the hindmost between the hind legs; similar but narrower bands across the upper part of the tail. Sides of head blackish, darker behind the eye than in front, with a pale line from the nostril to the eye continued behind the eye, to the nape, and another line along the upper labials, produced by some whitish tubercles to above the ear.

7. Hemidactylus coctæi.

8. Calotes versicolor.

*9. Chamæleo ceylanicus.

10. Typhlops braminus.

11. Oligodon subgriseus.

12. Cynophis helena. A specimen 41 inches long, agreeing very well with the description in Günther's *Reptiles*, except that the labials are more divided than usual, and the ventral shields more numerous. There are 11 upper labials on each side, the 5th, 6th and 7th entering the orbit; the præocular is large, extending to the upper surface of the head. Loreal divided into two shields, both in contact with the præocular, the anterior square, the posterior smaller, subtrigonal. Anterior frontals as long as broad. Ventrals 254; anal single; subcaudals in 75 pairs, the extreme tip of the tail having been lost.

13. Ptyas mucosus.

14. Zamenis diadema. A large specimen, 61 inches in length, agrees in most characters with Dr. Anderson's description (P. Z. S., 1871, p. 174,) of the form found in the neighbourhood of Agra. There are only 27 rows of scales round the body, the dorsal series being very distinctly keeled, the angulation of the ventrals is faint, and the præocular is divided into two.

The post-frontals are united into one shield, and there are three supplementary shields behind the post-frontal, as in the Persian form, *(Eastern Persia*, II, p. 412,) and not four as is usual in Indian specimens. There are 11 upper labials on one side, and 12 on the other. Ventrals 239 ; anal undivided ; subcaudals in 110 pairs.

The whole upper surface of the head is black, the colour extending in part to the labials, the remainder of the body is pale sandy in spirit, almost cream-coloured, pinkish anteriorly on the back, and dotted here and there with black spots, which are quite irregular both in size and distribution : (see Stoliczka, P. A. S. B., 1872, p. 82.) In life, as I learn from Major St. John, the lower parts were bright salmon pink.

15. Tropidonotus quincunciatus. A single young individual is sent, only 12 inches long. Uniformly coloured above olive-grey in spirits, white below ; even the characteristic black marks from the eye to the labials are wanting, although the posterior band is indicated by a faint dusky line.

16. Psammophis condanarus. The single specimen sent appears to approach the Sind form in some respects, and especially in having the nostril between two shields (Stoliczka, P. A. S. B., 1872, p. 83). But I find in a Sind specimen that the nostril is much smaller, the orifice being diminished by a valvular prolongation of the upper portion of the post-nasal. This form leads again to *P. leithi*, in which, as I have shewn, *(Eastern Persia*, II, p. 421,) there appear to be two post-nasals.

In the Ajmere specimen the principal marking consists of 4 longitudinal equidistant dark-brown, almost black bands, two on the back and one on each side, extending from head to tail ; the two upper bands coalescing on the tail. The bands are equal in breadth to the interspaces. The specimen is young ; it measures only 23 inches, the tail being imperfect.

17. Dipsas trigonata. A small specimen only $15\frac{1}{4}$ inches long, of which the tail is but $2\frac{1}{8}$. The colouration consists of rather irregular white, black-edged patches, having a tendency to form transverse lines on the back. Ventrals 215. The tail is slightly imperfect, but only a very small portion can be missing.

In young specimens of this snake, at all events, the tail does not always amount to a fourth of the length. I find notes of two specimens from the neighbourhood of Ellore, measuring respectively $15\frac{3}{4}$ and $23\frac{1}{2}$ inches, with tails 3 and $4\frac{3}{4}$ inches long, or rather less than one-fifth in each case. In the Ajmere specimen the tail is even shorter, about one-seventh.

This snake was captured amongst stones, and had swallowed a young *Calotes versicolor*.

18. Lycodon aulicus.

19. L. striatus. Two specimens sent, one 11 inches long, the other $9\frac{3}{4}$. Major St. John notices that these snakes had no yellow coloration, and suggests that the tint may be seasonal. His examples were procured early in April.

*20. Python molurus. This, as already remarked, is an unexpected addition to the fauna of Rájputána. The specimen obtained by Major St. John was 10 feet long, and was captured in bush jungle near the Pokur lake among low hills on the edge of the desert.

21. Eryx johnii.

*22. Najá tripudians.

23. Bungarus cæruleus.

24. Echis carinata.

XV.—*Notes on* Reptilia.—*By* W. T. Blanford, F. R. S., &c.

(Received and read 6th August, 1879.)

In the course of the last few years I have received small collections of reptiles from several friends in different parts of India and Burma, and I have collected some myself in Sind and its neighbourhood, and in Darjiling. Although, with the exception of one snake *(Homalopsidæ)* described below, none appear to be absolutely new, there are a few calling for remark on account of rarity, variation, or from the locality being previously unknown. I have thrown together these somewhat desultory notes in the following pages.

LACERTILIA.

Mesalina guttulata (*olim* pardalis).

Dr. Peters informs me that the species identified with *Lacerta pardalis* of Lichtenstein by Dumeril and Bibron *(Erp. Gen.* V, p. 312) and by Gray *(Cat. Liz. Brit. Mus.* 1845, p. 43) is not Lichtenstein's species, but that it is his *L. guttulata*. I believe the original types of Lichtenstein are in the Berlin Museum and have been examined by Dr. Peters.

The species abounds in the countries west of India (*'Eastern Persia,'* II, p. 377), and was described from Sind by Dr. Stoliczka, who supposed it to be a new species which he called *Eremias (Mesalina) Watsonana* (P. A. S. B., 1872, p. 86; see also J. A. S. B., 1876, Pt. 2, p. 26). I have since found it as far to the eastward as Jaisalmir.

Sphenocephalus tridactylus.

When in the Indian desert between Sind and Rájpútána in 1876, I daily saw tracks in the sand, which I believe to have been made by this lizard; but although I heard of the animal under its name of 'Rig mahi' I never succeeded in finding specimens. I believe that it is nocturnal in its habits, as I always found the peculiar vermiform tracks in the sand, which are, I believe, produced by it, fresh in the early morning. It has been obtained from both Sind and Cutch (P. A. S. B., 1872, pp. 76, 88), but it is said to be rare. I suspect, on the contrary, that it is common, but that, from its habit of burrowing and from its not moving about during the day, it is very difficult to find.

Zygnidopsis brevipes.

I am indebted to my friend Major Mockler for two additional specimens of this rare lizard. The single type was procured near Karmán in Persia at an elevation of 5,500 feet; the two specimens now sent are from some part of Southern Persia or Baluchistán, probably from near the coast, but I do not know the exact locality. The head was slightly injured in the original specimen, and those now procured shew the muzzle to be more conical than it is represented in the plate in '*Eastern Persia*' (see Vol. II, p. 397, Pl. XXVII, fig. 4) and the rostral shield to be distinctly angulate in front. The tongue too is slightly cleft at the extreme end.

Another error in the figure, judging from the more perfect specimens now procured, is that the tail tapers rather more than it is represented as doing. In neither of the specimens sent is the tail perfect; in one it has been entirely lost and the new growth is only beginning, in the other the extremity has been renewed. In one specimen the hind foot is one-fourth, instead of one-fifth, the length from thigh to shoulder.

The anterior margin of the vertical and the posterior margin of the præfrontal are straight, and so is the posterior edge of the vertical, not convex as in the type. The superciliary shields are also slightly different from the figure, the third from behind being the largest and fitting into the emargination on each side of the vertical.

The coloration is paler and consists of narrow brownish longitudinal lines, the only conspicuous bands being one on each side from the nostril through the eye down the upper part of each side.

The specimens are smaller than the original type, one being 3, the other $3\frac{1}{4}$ inches from nose to anus.

Draco sp. (? D. major, var.)

A single specimen of *Draco* of large size, sent to me by Mr. Davison, closely resembles *D. major* (J. A. S. B., 1878, XLVII, Pt. 2, p. 125), but

the hind limb just reaches the axil, the tympanum is covered with one or two large scales instead of being quite naked, and the nostrils are not directed upwards. If the last character were certain, there could be no doubt about the specific distinction of the species, but one nostril has a distorted look, and there is an opening from one nostril to the other through the septum, so that it is possible to see through both nostrils. Now the specimen having been obtained by an ornithologist, I think it has been carried, when freshly killed, suspended to a stick with a pin thrust through the nostrils—the common plan employed for carrying birds by collectors—and I am not sure how far the nostrils have been distorted by the process. The other differences are less important; in forms like *D. maculatus* with the tympanum scaly, the area is covered with small scales; and in those with a naked tympanum, part of the space is often occupied by a large flat scale.

The membrane of the 'wings' is dark-coloured, rather darker towards the margin than inside, with small spots formed of larger white scales. These spots are not arranged in as distinct rows as in typical *D. major*. Otherwise the coloration is the same in both. The length is 12 inches, of which the tail measures 8.

This may be a new species and I therefore call attention to it. I am much inclined, however, to believe it is a variety of *D. major* with the nostrils distorted.

Stellio tuberculata.

As might have been anticipated, this proves to be, in part, a vegetable feeder, like allied species. Mr. Wynne noticed some lizards feeding on leaves at Murree, and sent me a skin of this species and some of the contents of the stomach, which proved to be a mixture of fragments, partly of insects, partly of vegetables.

Agama agilis.

Dr. Peters writes to me that this species is *Agama sanguinolenta* of Pallas, and must take Pallas's name. It is also, Dr. Peters says, *A. aralensis* of Lichtenstein; the true *A. agilis* of Ollivier being a form allied to *A. (Trapelus) ruderata*. I am unable to examine into this question at present as I have not now access to Ollivier's work.

I found the lizard hitherto called *A. agilis* by myself and others (see *Eastern Persia*, II, p. 314 and J. A. S. B., 1876, pt. 2, p. 22) abundant near Jaisulmir in the sandy desert to the east of the Indus. I once or twice saw this species on low bushes, precisely as I have observed *Trapelus ruderatus* in Persia.

ACANTHOSAURA ARMATA.

I am indebted to Mr. Davison for specimens of this lizard from the neighbourhood of Moulmain and from Tavoy. Both forms differ somewhat in coloration from the published description. The Moulmain specimens are large, being nearly 12 inches long, and all the upper portions are dusky, the tail with pale rings, lower parts pale, the colour extending up the sides of the head and neck, in the former to just below the eye and in front to the *canthus rostralis* and on the neck, so that there is only a belt of black about one-eighth of an inch broad on each side of the crest; no radiating lines from the orbit over the lip. In the Tavoy specimens, which are younger, the upper parts are mottled with dusky and grey.

OPHIDIA.

HYPSIRHINA MACULATA, sp. nov.

Hypsirhina *ad* H. chinensem *affinis, sed squamis in* 25 *nec* 23 *series regulares longitudinales ordinatis, scutis ventralibus ad* 125. *Caput breve, rostrum truncatum, corpus robustum, cauda compressa. Scutum præfrontale unicum parvum, singulis postfrontalibus magnitudine secundum; præoculare unicum, postocularia duo. Color fusco-cinerascens, nigro-maculatus, abdomine albescente, fascia fuscâ longitudinali utrinque ad margines scutorum ventralium ornato.*

Habitat *in Pegu Burmanorum.*

Head short, very little broader than the neck, muzzle broad, square, as if truncated, body stout, tail short compressed. Scales polished, rhombic, in twenty-five very regular series. Ventrals narrow 125, anal bifid, subcaudals in 45 pairs.

The rostral, which just reaches the upper surface of the head, does not occupy much more than half the anterior margin of the upper jaw. The single anterior frontal is nearly as long as broad, and is a little smaller than each of the posterior frontals; vertical fully twice as long as broad, elongately subpentagonal; occipitals a little longer than the vertical. Loreal trapezoidal, on one side the loreal is partly united to the postfrontal; one præ-, two post-oculars. Temporals 1 + 2. Upper labials 8, gradually increasing in size to the 7th; the eighth is small and no larger than the adjoining scales, the 4th enters the orbit. Only one pair of large chin-shields, the posterior pair scarcely exceed the adjoining scales in size.

Colour blackish ashy with a row of large irregular-shaped black spots down the back and another rather less in size, but each spot including several scales, down each side; a blackish band down the margins of the ventrals caused by the dark edges of the shields and of the first row of scales on each side.

The specimen is 12 inches long, of which the tail measures $1\frac{3}{4}$. It was collected by Dr. Baker in Pegu, I believe, in the neighbourhood of Bassein, and sent to me with some other snakes for examination by Captain Spearman.

This *Hypsirhina* appears separable from all other species by the larger number of rows of scales. The scales in this genus are so regular, that I think even a single specimen affords sufficient evidence of distinction, and the Pegu snake is further distinguished from *H. chinensis*, its nearest ally, by having a smaller number of ventral shields. In *H. chinensis* there are 23 rows of scales round the body and 150 ventrals. I have not access to a specimen of *H. chinensis*, and so far as I am aware no figure of this species has been published, so I cannot tell whether *H. maculata* has a differently formed head. From the two species of *Hypsirhina* previously recorded from Burma and India, *H. plumbea* and *H. enhydris*, the present form is at once distinguished by its much blunter muzzle and smaller præfrontal shield, and by its coloration, besides the much more numerous rows of scales.

Dipsas trigonata.

A young snake, obtained by Major Mockler at Gwádar in Baluchistán, appears to me to be nearer to this species than to any other, although I cannot feel sure that it is correctly identified, for, although I can detect no distinction in the shields, the head appears narrower, less triangular, and peculiarly coloured, and the muzzle broader than in other examples of the species. The locality is of interest also, as it is much farther west than this snake has been previously found, Gwádar being about 200 miles west of the British frontier, and the occurrence on the Baluchistán coast shews how thoroughly terrestrial a form this species of *Dipsas* is, for there is not a single tree and scarcely a bush to be found near Gwádar, which is merely a fishing village on a barren spit of sand, between a rocky promontory and the mainland.

The length of the specimen is 12 inches, of which the tail is $2\frac{1}{2}$. Ventrals 230, subcaudals 92. The upper surface and side of the head are mottled with black, which prevails in front, so that the frontals, rostral, and anterior labials are entirely black or blackish. On the body there are the usual rather irregular transverse dark-edged whitish elongated spots.

Xenurelaps bungaroides.

This snake has hitherto only been reported from the Khási hills, where it appears to be rare.* In 1878, I captured a specimen close to Dar-

* Günther, Rept. Brit. Ind. p. 345; Jerdon, P. A. S. B., 1870, p. 82.

jiling, and, subsequently, Dr. Anderson obtained another from the Government Cinchona Plantation in Sikkim.

The specimen taken by myself is much larger than the type, and measures 32 inches in length, of which the tail is 4. It was caught in the dusk of evening on the road round Birch-hill, at an elevation of rather less than 7000 feet above the sea. When taken it appeared sluggish and made no attempt to bite.

Hydrophis lapemoides.

A specimen, sent from Gwádar in Baluchistán by Major Mockler and collected, doubtless, on the Makrán coast, agrees so well with Dr. Günther's description of *H. lapemoides* that I have no doubt it must be assigned to that species. The dorsal scales, in the posterior part of the body especially, have a short tubercular keel, but on the lateral scales there is only a central tubercle. Thirty-five black rings round the trunk, the anterior rings imperfect below. Length $15\frac{1}{2}$ inches, of which the tail measures 1·6 and the cleft of the mouth 0·4.

Hydrophis latifasciata.

A specimen, agreeing very fairly with the description of this species (of which the type was procured from Mergui), has been sent to me by Captain Spearman from Pegu. There are, however, one or two characters which seem to shew a tendency to a passage into *H. coronata*. The lateral scales on the hinder stout portion of the body have a slightly elongated tubercle rather than a keel, and the ventrals bear two such tubercles. Even on the dorsal scales, the keel does not extend half the length of the scale. The coloration agrees with the description of that found in *H. latifasciata* so far, that the yellow rings are very imperfect and the blackish colour covers a much larger portion of the body, the whole of the lower part of the anterior two-thirds being black and the yellow rings being only faintly traceable across the band throughout the thicker part of the trunk, they extend in general across the neck, though narrower on the upper surface, and appear in the anterior part of the body as well-defined transverse spots, but on the thicker portion and tail they are only conspicuous as elongated oval spots with indistinct edges along the sides. There are 56 of these imperfect yellow rings on the neck and body, 9 on the tail. Length 27 inches, neck about one-third of the whole, cleft of mouth 0·3 inch, tail $3\frac{1}{2}$.

XVI.—*Notes on Stone Implements from the Khasi Hills, and the Banda and Vellore Districts.*—*By* John Cockburn, *Late Curator of the Allahábád Museum, Officiating Assistant Osteologist, Indian Museum, Calcutta.*

(Received 1st July; read 6th August, 1879.)

(With Plates XIV, XV, XVI.)

Stone Implements from the Khasi Hills.

Stone implements have from time to time been found in the Province of Assam, but the specimen figured in Plate XIV (figures A, A^1), is unusually interesting, as being the first stone implement found *in situ* on the Khási Hills. The only previous record of a stone implement from the Khási Hills I can find, is by Col. Godwin-Austen, in P. A. S. B. for 1875, p. 158.* This specimen was picked up on the surface of the road, on the bridge near Col. McCulloch's house at Shillong, and no one who knows the locality can doubt that it had been dropped accidentally, probably from the pouch of some Khasia, a people who venerate celts as relics. Specimen B, (Plate XIV, figs. B, B^1) which I purchased from a Khasia, had a small portion scraped off. This, I was told, had been administered to a sick child in a draught of water. The first specimen (A), which measures roughly 3′ 50″ in length, by 1′ 65″ in width, is made of a tolerably hard argillaceous slate. It was dug up at Shillong in December, 1877, on the site of the house at present occupied by Brigadier-General Nation, in the presence of Col. A. Tulloch, then in command of the 42nd N. I., and Lieut. H. Stevens, Adjutant of the Regiment. These officers were superintending a working party of the men of their Regiment who were levelling the site, when one of the men, a Ghurka, came up to them with the celt in his hand, all incrusted as it was with clay, and said it had just tumbled out of a clod he had broken up. On the specimen being shown to me, I at once pronounced it to be a genuine celt, in spite of the soft material of which it was made. I visited the place the same day in company with these gentlemen, and was shown the spot where it was found. This was nearly four feet below the surface in clay. This clay overlies a peculiar sub-gneissose sandstone, and from sections I had an opportunity of observing on an adjoining site about 300 yards north-east of the General's house and elsewhere close by, it averages from five to seven feet in thickness.

I shortly after got specimen (B) from a highly intelligent Khasia in my employ; he said he had found it near Nongpo on the Shillong and Gauháti road. There can be no doubt as to the authenticity of this specimen, which is made of the same material (slate) as specimen (A,) and has

* For two other instances of stone implements in Assam, see P. A. S. B., 1872, p. 136.

a similar weathered coating. I cannot certify to the locality, for my Khasia friend had decidedly loose notions as to the value of truth, but am of opinion that it was also found on the Shillong plateau. In shape, it somewhat resembles the small Jade specimens from Yunan and may be considered as a form grading into the shouldered type of celt. I may mention that it bears a good deal of resemblance to the chisel used at the present day in file cutting. These celts of slate could hardly have been used as anything else but agricultural implements, hoes &c., as pointed out by Col. Godwin-Austen; but I would suggest that besides being used as instruments for digging up roots &c., fixed in a rude horn or wood handle, the chief use of celts of the smaller type from 6″ to 2″, made of greenstone or chert, was *for flaying animals.* The specimen figured at p. 251, Fig. 161, of the *Catalogue of Antiquities of the Royal Irish Academy* well illustrates how these small celts were handled, probably fixed with some hard resin, like the "black boy" gum of Australia, in a cavity scooped beneath the burr of a shed antler with a few inches of beam attached, so as to form a small handle. I was struck with this idea from the facility with which I have seen Chamars in the Cawnpore District, skin Nilgai *(Portax tragocamelus)*, with their rude *khúrpas* (an instrument like a flat metal celt, fixed into an obtusely angular handle, made of a branch of a tree and used chiefly for scraping up grass). I have not the least doubt that their aboriginal ancestors used these small celts, which were similarly handled, as deftly for this purpose in their day. I would myself undertake to skin in a couple of hours an animal the size of a heifer with a celt handled and sharpened, and the assistance of a few flint flakes or shells.*

* I find I have been perhaps anticipated in the above remarks by Mr. V. Ball, in a paper read before the Royal Irish Academy on the 30th of November, 1878, but of which I did not see a copy till June last, while my paper was written in the previous November. I here copy this portion of Mr. Ball's paper. "There is one class of stone implements unsuited to any of the above-mentioned purposes, but which being provided with sharp edges it seems very probable were used as skin-scrapers. In connexion with this, I may mention that on one occasion in the Satpura Hills in the Central Provinces, having shot a bear I gave the carcase, with some knives to the people who had brought it to camp, in order that they might take off the skin. These people belong to a tribe who always carry a very small well-sharpened iron axe of a form I have not seen elsewhere. After working for a short time with the knives, they discarded them for the axes, which they removed from their wooden handles, and then placing their thumbs in the holes grasped them firmly in their fingers, and continued the flaying with astonishing rapidity. In a similar way, I believe that the scrapers of stone may have been used for the preparation of skins, which when rudely dressed afforded the only clothing of these early inhabitants." I may here remark that these small curved axes are used throughout Bundlekhand, and that I always carried one myself for many years on shooting excursions.

In connexion with the subject of stone celts, I may mention that it is not generally known that the natives of Upper Assam use a genuine metal celt at the present day. The only record I can find of a somewhat similar implement is in the P. A. S. B. for 1871, p. 83, where a celt of this kind is spoken of as used in Arakan, fixed on a long bamboo handle.

This simple but highly efficient Assamese axe somewhat resembles a modern African axe figured by Sir John Lubbock at p. 28 of the 3rd edition of *Pre-historic Times*, and is almost identical in principle with another modern African axe, fig. 256, p. 370, *Cat. Ant. R. I. A.* It consists of a moderately stout handle of a dark and heavy wood, slightly curved upward at the haft end, where it expands into a hard natural knot. Into this knot is inserted at an angle, a tapering chisel-like blade of iron about 2·25 in. wide at the cutting edge, tapering to a point, and about 8 in. long. An axe of this kind will stand three or four years of hard work without splitting, and the dexterous and efficient way in which it was used excited my admiration. A family or party consisting of five or six males will fell and clear three acres of dense forest in two months, working at leisure. I observed this kind of axe used from Dumduma to Saikwah Ghat on the Sadiya Road, in the hands of Muttucks, Ahoms and Miris. Occasionally these tribes take contracts from tea-planters to clear forest, and, I have been informed, prefer their own tools to the best English felling axes. On one occasion I myself had to fell a considerable sized tree near a clearance at Dollah, near Sadiya, for the purpose of obtaining the eggs of a wood-pecker, and set to work with an English axe. The tree was quite 20 in. in diameter, and I had not gone two inches into the wood, when a man came up bearing one of these primitive axes, and volunteered his assistance, refusing at the same time the proffer of my axe, on the grounds that it was unnecessarily weighty, too broad, and formed a thick and clumsy wedge. In a quarter of an hour he had the tree down, and in a short time more the glistening eggs were in my hand. This iron Assamese celt, which, if found elsewhere, severed from its handle, would be considered of quite the same type as the narrow bronze celts considered by some Antiquaries to have been chisels, suggests the reflection that fig. 252 A. of the *Cat. Ant. R. I. A.*, which has been accepted all over the world as the method in which the flat wedge-shaped celt was handled, more particularly since its reproduction in Sir J. Lubbock's popular and interesting work *Pre-historic Times*, (see p. 25, 2nd edition,) is not quite correct.

In this figure the taper point and a proportion amounting to nearly one-fourth of the instrument, is seen projecting above the handle, while

a cross ligature of tendon or cord gives additional security to keep the head from falling out and the handle from splitting.*

That some celts were so handled has received additional confirmation from a Plate in Fergusson's *Tree and Serpent Worship*, where a man, considered an aborigine†, is represented cleaving wood with a celt, which, as the cross ligature and the projection of a portion of the metal above the handle show, was handled in the manner suggested in the *Cat. Ant. R. I. A.* But figs. 274 to 251 in that work, and all bronze celts of the long narrow type were, I am inclined to think, hafted imbedded in a knot as in the modern Assamese axe. Flat copper celts of exactly the same type as represented in the bas-reliefs of the Sanchi Tope have been found in the Mainpuri District, in the Gangetic Duáb‡ and also in the Balághát District, hardly more than a foot below the surface, indicating their use at a comparatively modern date.§ Copper or bronze (?) implements were, I am inclined to think, in use all over the Duáb in the second century after Christ, in conjunction with iron, which was either too costly to be procured by the poorer classes or too valuable to manufacture agricultural implements of. At this era I would assume that certain tribes of aborigines who yet maintained their independence, in impenetrable jungles or hills in various parts of the country, continued in or were slowly passing out of a stone age. The chert flakes and arrow heads found in Bundelkhand *on the surface* possibly originated at this time, as well as some of the numerous polished celts found in this part of the country.

We know how rapidly savage communities pass from a Stone age into an age of Iron, from the evidence of Capt. Cook regarding the New Zealan-

* A remarkable find of copper implements at the village of Gungeria, Mhow taluk, Bálaghát District, is recorded in P. A. S. B. for May, 1870, (with a Plate), when 424 copper celts and some silver ornaments were found a few inches below the surface of the ground. I would suggest that specimens 1 A, 1 B were socketed as in the Assamese axe, while 3 A, 3 B, 3 C were handled after the fashion shown in the railing at Sanchi, and as divined in the Cat. of the Royal Irish Academy. With regard to the very extraordinary silver plates found at the same time, I would throw out the suggestion that they were human ornaments, and not bovine. The only instance of a similar silver ornament worn among savages at the present day, is the possibly analogous thin silver plate, worn on the forehead by the Mishmi women (see Dalton's *Ethnology of Bengal*). It is improbable that the race who made these ornaments venerated the cow at all.

† Fergusson calls these people Dasyus and elsewhere speaks of them as hated and despised aborigines.

‡ P. A. S. B., 1868, pp. 251, 262.

§ A flat copper celt of exactly this oblong type has been found associated with Buddhist remains in the Chaubara mound, Muttra. General Cunningham, *Report of the Archæological Survey*, 1871-72, p. 16, Vol. 2.

ders, and from what we see of the existing Andamanese. Nevertheless, I think we may fairly assume that stone continued to be employed for flakes and arrow-heads &c. long after iron was first introduced. The North American Indians long continued to use flint and jasper for arrow-heads when they were in the possession of abundance of iron tomahawks and knives, and even firearms. Catlin in his work on the North American Indians records how the Western hunter using a gun on horseback was unable to compete with the Red-skin using the bow and stone arrow in the chase of the Bison, and how this flint-tipped arrow was frequently driven right through the ponderous shoulders of the mighty beast, by the sinewy arm of the savage.

There is no reason why a savage should not be able to fell a tree with a good big celt such as the fine specimen, 10 inches long shown in Plate XVI, (fig. G,) sharpened and handled. In fact, marks corresponding to such as would be made by a stone implement, have been discovered on ancient piles in the Lake-dwellings of Europe, clearly showing that such implements were used for cutting wood.

Stone Implements from Banda.

Abú'l Fazl, in the Aín-i-Akbari, describing the fortress of Chunár writes: "Near this fort are a race of people who go quite naked, living in the wilds, and subsisting by the use of their bows and arrows. In those wilds are also elephants." I have tracked the Sambar with the descendants of these savages, the modern Kols, not far from Kirwí, a great locality for celts. This brings me to the subject of the Banda implements. None of these celts have been found in their original situation by Europeans, and there seems a good deal of mystery attached to the circumstance of their extraordinary abundance in this tract, and the comparative rarity of such lithic remains elsewhere. I am of opinion, however, that they will be similarly found (on shrines and under trees) nearly as numerous in other parts of the Peninsular of India, inhabited by aboriginal races to within a recent period. Mr. H. P. LeMessurier was the first to draw attention to these remains in Bundelkhand, in P. A. S. B. for February, 1861. He was of opinion that they had all been found within a few miles of where their finders had deposited them, an opinion I endorse for reasons to be stated further on. He also personally discovered a chert arrow-head of an European type, twenty-eight miles east of the Cachai Falls (Tons), a discovery of the greatest interest.

In the Proceedings for June, 1862, J. A. S. B., XXXI, p. 323, Mr. W. Theobald, in a short paper, which continues to be the only memoir of importance on the subject, added considerably to our knowledge of these Banda

implements, figured a series, pointed out the principal types, and further extended the area of their prevalence to 200 miles east of the Tons river. He accounted for their abundance in the vicinity of Kirwí by the hypothesis that it was due to some "superstition which induced men of old time, to collect these relics of a still older age, and convey them to the shrines and localities where they are now so abundant, so that celts collected over thousands of square miles are now accumulated about Kirwí and its environs." This supposition of Mr. Theobald's agreed well at the time with the scarcity of other stone weapons in this area, compared with celts—one stone hammer, and a single chert arrow-head being alone recorded by Mr. LeMessurier. In the light of our present knowledge of stone remains within the Peninsular area, I would modify this theory of Mr. Theobald's. In February 1878 I found a number of chert flakes on the eroded surface of a rain-washed field, situated on the bank of a small stream, only a couple of hundred yards away from a tope near the village of Hatwah, in pargana Chibun, district Banda. They were all of a small type, and exactly resembled those from Jabalpur in the Geological Museum. Two of them were perfect, the remaining few were fragments, which when restored would have been from three quarters of an inch to an inch and a quarter in length. Unfortunately they were all lost. Regarding the use of these flakes there can be very little doubt that they were used, held between the fingers and thumb, in making the first incision down the mesial line in the process of skinning, the remainder of the operation being completed with the comparatively blunt celt. The discovery of these flakes led me to make more extended enquiries on the subject than hitherto from natives, some of whom were Bráhmans of intelligence, whose families had been settled in the villages around for generations. The more intelligent of these men, while stoutly maintaining the great antiquity of the celts, and that they (the Bráhmans) had remembered the celts as children under the trees where the implements still remained, and that their fathers had handed down the same story to themselves, admitted that celts continued to be found to the present day; one of the Bráhmans interrogated had found one himself, while the others had all heard of, or seen instances of celts being found in their own village fields. Some of the ignorant were unable to account for the reverence with which they regarded these stone remains; evidently having a sort of confused idea that the celts were in some way connected with the Phallic emblem worshipped by the Hindus. Others considered the celts thunderbolts, calling them—"*Bijli ka puthul*"—lit. "stones of the lightning," an idea which prevails in every quarter of the globe.

I can confirm what Mr. Theobald says regarding the ability of the

natives to recognise the veriest fragment of a celt, pieces in fact which have been declared by educated Englishmen to be fragments of pebbles. The people, however, seem to regard a smooth surface on some part of the implement as an indispensable test of the authenticity of a celt, and failed to recognise flint knives. This would account for the singular absence of palæolithic weapons among these remains in Banda. A seeming exception to this rule is the heart-shaped type of celt, of which No. 4 is a fragment, but these, though chipped, invariably exhibit the best cutting-edge, when perfect, of any I have yet seen, and this is also Mr. Theobald's experience, see fig. 4, Pl. II, of his paper. The same remarks apply to the elongated chipped fragment, No. 13, of my list, (Plate XVI, fig. H) which is polished on the bevelled surfaces forming the edge, and is yet sharp. The stone hammer was probably retained by its finder for the same reason. This hypothesis of mine, is, however, open to objection, based as it is on the absence of palæolithic implements in a tract which yet remains to be carefully explored.

The majority of my specimens were picked up under Pipal trees, sometimes on the road side, but more usually growing on the high bunds of the tanks so common in Banda; a number were removed by me from off a huge Phallus, where they lay in the groove of the female emblem. Specimen No. 2, I found on a stone slab in a ruined temple; Nos. 5 and 7, I found on a mud altar with the hammer described further on. Others are often placed in the fissures and clefts of trees. It is curious that precisely the same idea exists in this part of India on this last point as on the continent of Europe, where the peasantry place celts, called "thunderstones" (as I have often heard them called in Banda), in the clefts of growing trees. I have twice dug out celts with my hunting knife, which were so grown over by Pipal trees; on one of these occasions, only the conical tip was visible! With regard to the finding of these celts by natives, most of them have, I believe, been found in excavations a few feet deep; some have doubtless been turned up by the plough; a large proportion again have been found in watercourses or streams, into which they had been washed along with the soil; others have been found on the eroded surface of fields. In one instance alone did a celt picked up by me show unquestionable traces of having been lately deposited under the tree where I found it. This specimen, which I think I gave to Mr. G. H. M. Ricketts, C. S., C. B., had red sand adhering to it in compact lumps, so hard as to justify the belief that it was part of the original matrix in which the celt was found.

The accompanying table gives details of the types found in Banda, by myself, and my brother William Bruce Cockburn, who first drew my attention to them, has himself collected a large series, and has aided me very materially in searching for them personally.

Table giving Weights and Dimensions of Celts from Banda.

No.	Length.	Greatest Width.	Weight. lbs.	Weight. oz.	Remarks.
1	10·45	4·20	5	2	This magnificent specimen was found by my brother W. B. Cockburn, in the village of Lohra, Pargana Darsenda. I believe it is the finest polished celt of this type found in India. Material Diorite. (Plate XVI, fig. G.)
2	6·66	2·70	1	5	Found in a ruined temple 5 miles from Hatwah, Do.
3	4·50	2·75	1	4½	Of a peculiar massive type. Do.
4	5·41	3·75	1	4½	Chipped fragment of heart-shaped type made of fine-grained trap. Two of the most highly finished specimens I have yet seen from Banda were of this type. I gave them to a brother antiquary and regret not having preserved drawings of them.
5 (D)	4·12	2·90		11	Of fine-grained black trap. Found on mud altar with stone hammer.
6	4·25	2·86		9	Of intermediate size. Diorite.
7 (E)	3·50	2·25		6½	Found on mud altar with stone hammer. Diorite.
8	4·85	2·20		11½	Of long narrow type, very close to those from Vellore.
9	4·50	2·25		8	Material Diorite.
10	2·95	2·		4	Of smallest type. Diorite.
11	2·50	2·05		3¾	
12	5·80	3·70		10	Flat celt ·75″ thick of indurated shale. This is a very interesting and instructive specimen.
13	4·30	2·		6¼	Elongated chipped fragment of fine-grained trap exhibiting a remarkably good edge. Possibly used in the hand in flaying, very much as an anatomist uses the end of his scalpel more for detaching than cutting. (Plate XVI, fig. H.)
14	3·25	2·13			Pear-shaped implement of sandstone bearing evidences of having been subjected to heat. Interesting as being the first implement of this material from Banda.

The above specimens, with a series of 20 more, chiefly duplicates of these types, are in the Geological Museum, Calcutta. A and B (Plate XIV), from Shillong, are in the Indian Museum, as is also a remarkable specimen of stone hammer, which requires a detailed description.

This stone hammer (Plate XIV, fig. C) was picked out by me in February, 1878, off a mud platform, or altar, four feet high, built at the angle formed by two mud huts, three miles south of the village of Hatwah in the District of Banda. There were quite a heap of stones on this platform, most of them water-worn pebbles, and two celts (5 and 7, of Table). There is no specimen of this type of hammer, or more correctly oval tool-stone, in the Geological Museum, and, as I can find no mention of a similar specimen in Mr. Ball's tabulated list of stone implements, I believe it is the first specimen of its kind found in this country. Similar implements have,

however, been largely collected in Europe, and my specimen is a facsimile of fig. I, pl. I of Prof. Nilson's work on the Stone Age, and also closely resembles an Irish specimen figured in the *Catalogue of Antiquities in the Royal Irish Academy*, p. 94, fig. 75. The Banda specimen is obviously a water-worn pebble of a red quartzite, with a tolerably deep hole in one side. It seems that water-washed stones were similarly utilized in Europe during the stone age, for Mr. Wilde says, in reviewing the Irish collection, that "some of these stones are natural water-washed pebbles, others are evidently shaped by art." Regarding the indentation or hole, which is sometimes found on one side only, at others, in precisely similar specimens, on both sides, the Editor of the Catalogue is of opinion that it is the first step in the formation of a hole, which it was the intention of the maker to carry right through, and fig. 76, which yet more closely resembles my specimen in size and outline than fig. 75, with a large series in every stage of manufacture, clearly shows this. There can be very little doubt that these so-called tool-stones were used as hammers for cracking small bones, nuts &c. and for lighter work generally, during what must have been a protracted process, the boring. My Banda specimen bears evident marks of the effects of percussion at either end, which it would be difficult to account for otherwise, and from the singular convenience of hold it affords when held between the finger and thumb, it was probably so held and used.

Stone Implements from Madras.

Stone implements of a neolithic type have hitherto been remarkably scarce in the Madras Presidency, there being only one recorded instance in the Society's Journal of a polished celt having been found within this area, (P. A. S. B., 1868, p. 59.)

I have since had a series of polished celts from Vellore of quite the same type as the Banda celts.

This collection of polished celts from Vellore is of the greatest importance. Mr. V. Ball, in his paper "On the Forms and Geographical Distribution of Stone Implements in India," considers the whole of Southern India (coloured red in his map,) as productive of palæolithic implements of chipped quartzite only. Up to the time Mr. Ball wrote, there had only been a single recorded instance of a polished celt having been found within this area, (P. A. S. B., 1868.) After his essay had been printed, Mr. Ball examined a series of polished celts from the Shevaroy Hills, in the British Museum, but he remained inclined to consider this *find* another instance of an outlier. I leave it to the reader to consider whether the accumulated evidence collected now is not quite strong enough to seriously affect Mr. Ball's theory.

The series of ten now exhibited were found on a low rude sort of stone table, under a tamarind tree, near a Mallayam temple, in the

village of Tulleh of the Vellore taluq, North Arcot district, by my friend Flo. W. Tucker, Esq., now of Naini Tal, who was then in the Madras Presidency on Famine duty.

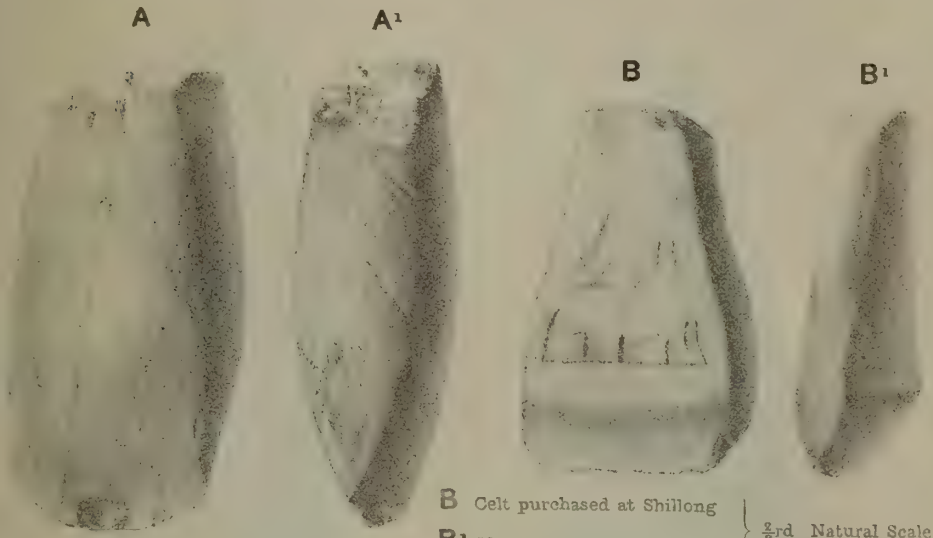
The Vellore celts closely resemble others of the long narrow type from Banda (specimens 8 and 9), and from the red tinge communicated to the surface of these implements, it is probable that these Vellore specimens have also been derived from the surface of laterite beds like the ruder weapons of chipped quartzite from the same district. Three of these Vellore implements are figured in Plate XV, figs. D, E, F.

There are three forms of stone implements, the uses of which are considered by many more or less problematical. 1st, The oval tool-stones and mauls,* of the former of which the specimen described above is a typical example. 2nd, Sledge hammers of stone, such as are held in the hands and used in working metals by African races at the present day. Implements of this type do not appear to have been discriminated in Europe where they doubtless occur, but a very fine Indian specimen from Powari, east of the Sone river, is figured by Mr. Theobald in pl. 1, fig. B, J. A. S. B., Vol. XXXI, (see p. 326 of his paper). 3rd, Spindle whorls, which when found perfect (made of bone) have not exceeded $2\frac{1}{2}$ inches in diameter; but from what I have seen of their use among modern natives, I believe that stone implements of this type from 3 in. to $3\frac{1}{2}$ in. in diameter might well have been so used. 4th, Ring stones or stone bracelets.† This I believe to have been the real use of the large type of flat round stones with perforations large enough to admit the small hand and wrist of a savage. Certain Indian castes at the present day with a strong infusion of aboriginal blood in their veins, Chamars and Pasis in the N. W. P., continue to wear ponderous bracelets on the wrist made of a composition like bell-metal. I have seen these ornaments quite 5 in. in diameter with a triangular section an inch and a half wide at the base. There is what I take to be a typical specimen of this Indian stone bangle in the Geological Museum, which exceeds an inch in thickness on the inner side of the circle, and is bevelled to a sharp edge on the margin.‡ The aperture is sufficiently large to admit a small hand. I

* A circular perforated type of maul surrounded by a groove, of which two were found at Chidizi, in Balúchistán, and described in the Proceedings of the Asiatic Society for July, 1877, should be included in this list.

† A fine specimen of ring stone of jade from Burmah, said to be ancient, is described in Vol. I, p. 328 of the *Indian Antiquary*. It measures 4·3 in. in outside diameter, with a hollow in the centre 2·2 in. across, leaving the circle 1·1 in. broad, which is, however, only half an inch thick on the inner side and is bevelled to a sharp edge on the margin.

‡ This specimen has been figured at Plate VII. of Vol. X, Pt. II of the *Memoirs of the Geological Survey* (The Geology of Pegu), and was rightly considered an armlet by Mr. Theobald.



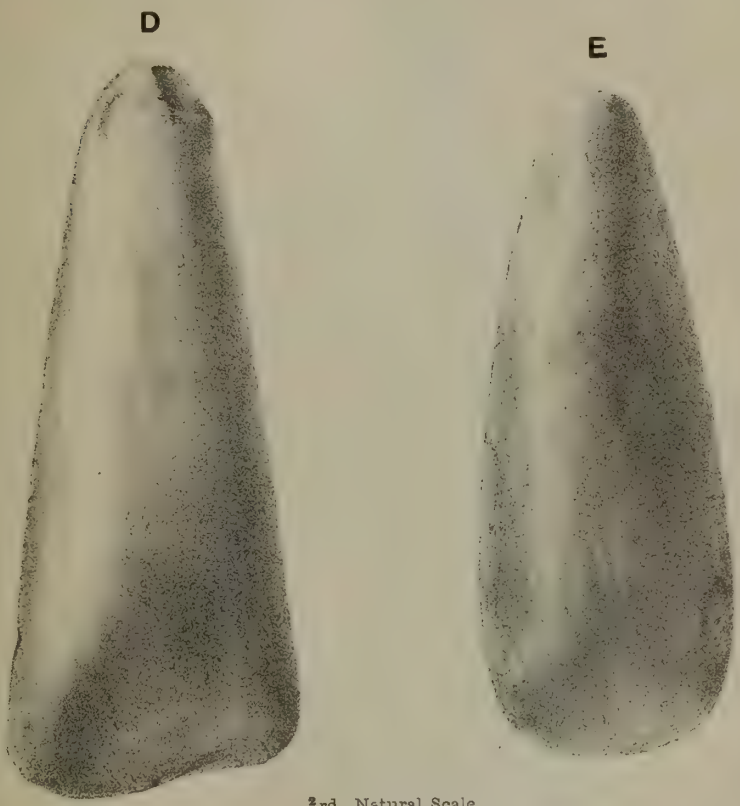
B Celt purchased at Shillong
B¹ Three-quarter view of ditto. } ⅔rd Natural Scale

A Celt found *in situ* at Shillong
A¹ Three-quarter view of ditto. } ⅔rd Natural Scale.



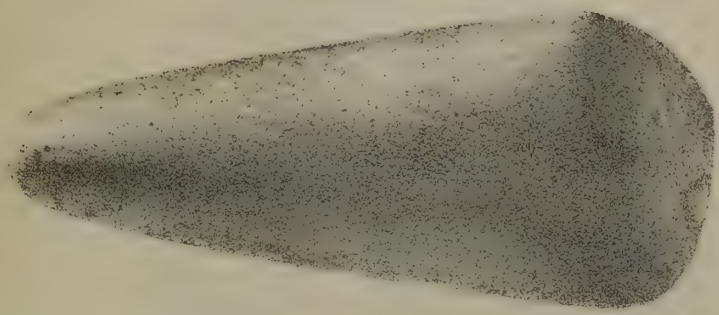
C Oval tool-stone from Banda
C¹ Section of ditto. } Full Size.

Lithographed at the Surveyor General's Office, Calcutta, November 1879.



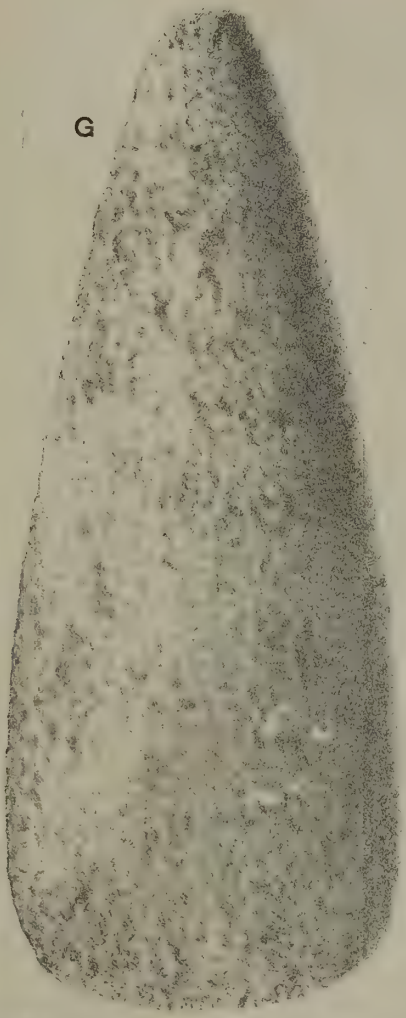
$\frac{2}{3}$rd Natural Scale.

F Full Size.

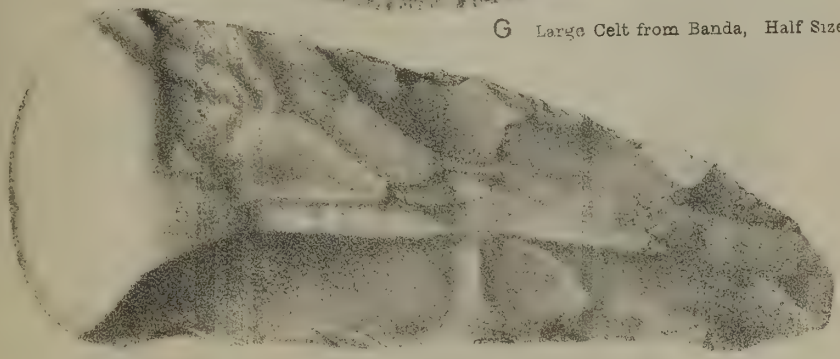


D. E. F Celts from Vellore, Madras Presidency.

Lithographed at the Surveyor General's Office, Calcutta, November 1879.



G Large Celt from Banda, Half Size.



H Elongated chipped implement from Banda Full Size.

Lithographed at the Surveyor Gen[illegible] Office Calcutta, November 1879.

have seen native women screw their hands into bangles barely over two inches in inside diameter. Those with the perforation only $1\frac{1}{2}$ in. in diameter were probably in the course of manufacture. The peculiar conical nature of the orifice on both sides in these specimens is due to the necessarily rotary motion imparted to the borer by the hand and arm. These holes were usually begun on both sides, for the reason that they would be easier to enlarge when so made.

XVII.—*The Ravages of Rats and Mice in the Dakhan during the Harvest of* 1878-79.—*By the* Rev. S. B. Fairbank, D. D.

Some years ago, when itinerating in the vicinity of the Perá River, near Ahmednagar, I was astonished at the stories told me about the destruction of whole fields of *Jawárí (Holcus sorghum)* by rats. I went to the fields, and, though it was after the harvest so that I could not see the progress of devastation, I found the ground thickly dotted with small holes, and marked in all directions by the paths the rats had made, principally in passing from one hole to another. I tried to get specimens of the rats, but failed, as I was then unacquainted with their habits, or perhaps they had gone elsewhere, as the people claimed they had. They must have been the Mettáḍ rats *(Golunda mettada)* of whose ravages Sir Walter Elliot wrote fifty-three years ago.

Since I saw those fields I have sometimes heard of injury done to crops by rats, but of nothing very extensive, till their ravages that began at the end of 1878, when the *Rabí* (winter) crops began to ripen, attracted the attention of everybody. There had been destruction before, but when, daily, large quantities of green Sorghum stalks were brought to Nagar for sale, and it was known that they had the night before been cut down by rats, everybody wakened up to the importance of the subject. At first stalks were cut down here and there in the fields, but more were cut as the days went on. And afterwards fields were suddenly attacked and destroyed in a few nights. When food became scarce where they were, the rats gathered their forces and an army of them invaded fields that had not been harmed before and quickly destroyed them. In some places they did not cut down the stalks, but climbed them and gnawed off the ears of grain. Some of the ears thus cut off were eaten or partially eaten where they fell, and some were hauled into their holes by the rats and stored there. A good deal of the grain thus stored was dug up and used for food. The farmers, finding that the rats would not allow their grain to ripen, gathered as many as they could

of the unripe ears, and, although the grain was still in the milk stage of its development, when dried it was fit for food. They thus saved an eighth or a sixteenth of the crop they had expected to harvest. The rats also attacked the growing wheat and much of that was harvested while the grain was in the milk, but the dried unripe grain was shrivelled, small in quantity and poor in quality. Gardens of egg-plants and other irrigated vegetables were found by the rats and the fruit was eaten by them while it was still immature. Even carrots were eaten, and so was lucerne in the hot season, when their supply of *harayáli* grass *(Cynodon dactylon)*, which is their usual food, was exhausted. The patches of melons and other *cucurbitaceæ* that are grown in the moist sand of river beds during the hot season, were nightly visited by the rats, and each melon was eaten before it was ripe enough for the use of man.

These ravages extended over several thousand square miles. The Párner, Shrígonde and Karzat tálúks and part of the Nagar tálúk in the Ahmednagar Collectorate, the Indápúr tálúk of the Púna Collectorate, all the Sholápúr Collectorate and the northern third of the Kaládgí Collectorate, as well as the adjoining Native States, were ravaged, though the crops were not so much injured along the N. E. and S. W. borders of this belt as they were in the middle of it. How far the plague extended to the E. and S. E. of the region specified above I have not been able to learn. Groups of villages in other parts of the Ahmednagar Collectorate, especially to the N. E. of Nagar, suffered in the same way. The region particularly specified extends from N. W. to S. E. for about 175 miles, and is from 40 to 80 miles wide. I travelled through a large part of it in May and June, and found that most of the villagers had already consumed what the rats had left, and in whole groups of villages there was no grain that could be purchased which had been raised there. All that I could find was imported grain and was mostly the flat kind of Sorghum that is brought from Jabalpúr. The people had been living, for weeks, mostly on wild seeds and sweet potatoes (using the leaves as well as the roots) which had been raised by irrigation. Near Sholápúr there was some *bájarí (Holcus spicatus)* left of the *kharif* (autumn) crop of 1878, which was for sale ; and *náchaní (Eleusine coracana)*, to the use of which the people were unaccustomed, was also brought from the Madras side and exposed for sale. The wild seeds of *Indigofera linifolia*, *I. cordifolia* and *I. glandulosa* were also sold, the price being about two-thirds the price of Sorghum millet. The seeds of some malvaceous weeds, such as *Abutilon indicum* and *Hibiscus* sp. ?, were also used for food, but I found none exposed for sale. I looked in the fields for specimens of the *Tradescantias* and *Commelinas*, the seeds of which were prized so highly in the famine of 1877, but could find none. It would seem that they had been nearly extirpated.

The people attribute these ravages to the Jerboa rat *(Gerbillus indicus* or *G. cuvieri)* which they usually call the *pánḍhará undir*, that is, the *white rat*. The white belly of the *Gerbille* is often distinctly seen when it is jumping about in the dusk of evening. They say there are also *Kálé undir*, that is *black rats*, among the robbers, but that they are comparatively few. These are the *Kok* or mole-rats *(Nesokia indica)* which are not black but only dark and much of the size and colour of the brown house-rat *(Mus decumanus)*, though they are at once distinguished by their broad bluff muzzle, and are much heavier. The people suppose that the Mettáḍs, which are of still another group and are for their size more destructive than either of the above, are the young of the others. Jerdon calls the Mettáḍ *(Golunda mettada)* "the soft-furred field-rat." Most would rather call it the large-eared field-mouse. These three species include most of "the horrid rats" which have increased so astonishingly, and thus have been able to ravage so large a region. In some places the house-rats and mice, and other field rats and spiny mice helped to devour the crop.

I wrote of these matters briefly to Mr. W. T. Blanford, who is our authority on matters pertaining to the Mammalia, and I give an extract from his answer, as follows:—"By one of the last mails I had a letter from Sir Walter Elliot (who, you may remember, was the first to collect the rats and mice of the Dekhan and to notice the injury committed by them,) referring to the plague these animals had been, and suggesting that *Mus mettada* was again the depredator. It is new to me to hear of *Gerbillus indicus* (or rather the Southern *G. cuvieri)* as a serious nuisance." But though I think the Mettáḍ should have the credit of learning to climb the Sorghum stalks and to cut off the ears of grain, there is no doubt that the *Gerbilles* have been the most numerous and so the most destructive this year. They have been taken in the act everywhere. And for the sake of the crops to come, it is particularly a matter of regret that they seem to thrive just as well during the rains as in the other parts of the year. The Mettáḍ lives mostly in the cracks and the small burrows it makes in the black soil; and the Kok burrows in the black soil. Where the first rains that fell were heavy, the black soil suddenly swelling, so as to fill up any holes or cracks there had been in it, caught the Mettáḍ and Kok rats as securely as traps would have caught them and smothered the greater part of them. T. Davidson, Esq., writing me from Máḍha, of the Sholápúr Collectorate, on the 29th May, tells how it was there. "There was a grand slaughter of rats on Monday night and Tuesday morning. It rained 2.65 inches, and in the morning the whole black soil was covered with dead and dying rats, sticking in the mud. The people say half have died."

But the Jerboa rat makes his burrow in the light soil, in stony places,

or, if in the black soil, among bushes where the soil does not bake and crack so much, and he burrows so that his sitting-room is near the surface, though approached by passages that are deeper, and he can easily work through the roof of it if water troubles him. The *Gerbilles* about here do not seem any less numerous than they did before the rains began. At any rate they are still excessively abundant.

The people use no means for destroying these rats. They seem superstitiously afraid of still more vexing the angry divinity. So they say "The rats were sent, and if we kill them, more will come." Or, thinking that those who died in the famine have now been born as rats, they say, "We did not feed them when they were starving, and now they have come back to eat us out."

The black-winged Kite *(Elanus cœruleus)*, feeds on these rats, and is now, for the first time in my experience of thirty-three years, abundant in this part of the Dakhan. In former years I saw one or two in the course of the cold season. But this year I have seen them by dozens in a day and they are still here (in July,) and to be found all the way from Ahmednagar to Bijápúr.

XVIII.—*Notes on the Survey Operations in Afghánistán in connection with the Campaign of* 1878-79. *Compiled from Letters and Diaries of the Survey officers by* Major J. Waterhouse, *Assistant Surveyor General.—Communicated by* Major-General J. T. Walker, R. E., C. B., *Surveyor General of India.*

(With Map—Plate XVII.)

The Campaign in Afghánistán has added considerably to our geographical and topographical knowledge of that country, thanks to the zeal with which the Survey operations were pushed on by the Surveyor General's and Quarter-Master General's Departments, aided by the Political and Military authorities. No less than 13 officers of the Survey of India were employed with the three columns—7 with the Quetta Column, 2 with the Kuram Valley Column and 4 with the Peshawar Column.

The operations of the professional survey were also, with the Quetta and Kuram Valley Columns, supplemented by the work of regimental and staff officers who in some cases were appointed Asst. Field Engineers to aid in the Survey, and in others worked independently under the military authorities.

I. Quetta Column.

A large number of Surveyors being with the Quetta Column, a good deal of quite new country was explored and old reconnaissances checked and improved. The survey operations were, however, almost always in immediate connection with the military movements, and although every possible assistance and facility was freely given by the authorities, the work of the Surveyors had to be confined to a few miles on either side of the routes followed by the troops, and to fixing points from such mountain peaks as they had the opportunity of ascending.

Necessarily many of these routes were the same as had been surveyed in 1839-42, but, thanks to the advanced state of the operations of the Great Trigonometrical Survey of India, they can now be more accurately connected with the Geography of India, the connecting link being the preliminary triangulation carried on by Capt. Rogers, R. E., in the early part of 1878 and consisting, as stated in the *General Report of the Operations of the Survey of India for* 1877-78, p. 15, of an extension of the Indus Series by a secondary triangulation from the western Frontier of Sind into Baluchistán, along the line between Jacobabad and Quetta, and of a small triangulation in the Quetta Valley for the purpose of fixing the position and heights of the most conspicuous hills around, and connecting them with permanent marks which were put down for reference near the cantonments.

The survey operations with this column have consequently been based upon this triangulation. The fixed peaks on the Sulimani Range have been and will be very serviceable for the lines of survey from West to East across the great belt of hitherto *terra incognita*, between the road to Kandahár and the British Frontier.

Capt. M. W. Rogers, R. E. was attached to the advanced Force under General Stewart and carried on a route Survey from Quetta to Kila Abdulla at the foot of the Kwája Amrán Range, and thence to the crest of the Khojak Pass on the same range. He says this range was a great obstacle to the survey, extending right across the route and presenting no peaks for identification on the other side. It runs North and East, bearing 210° or thereabouts. There are in it three known passes, Khojak, Roghani and Gwája. The Khojak, the most northerly, starts from Kila Abdulla and was the one used by the army in 1839. It is about 10½ miles to the crest or *Kotal*, which is about 7,600 feet above sea level. The first 10 miles are not difficult, but the next 1½ are very steep, narrow and winding, and no work had been able to make it more than a practicable but difficult road. From the crest there is a very steep descent; a zig-zag camel track had been made and a straight (or nearly so) slide for guns (angle 30°); over this the field guns were lowered, but it would be almost impossi-

ble to bring them up again. To Chaman, on the Kandahár side from the crest, after the ½ mile of steep descent, there is a gentle slope of 4½ miles.

The country on the other side of the Khojak he describes as a plain with small hills and ranges rising from it. Towards the south-west it is a sandy desert to all appearances with no hills.

From a hill of 8,200 feet near the Khojak he observed two of his old stations Takatu and Chiltan and all recognisable peaks around, especially in front.

He then went with General Stewart to Gulistán Karez, at the foot of the Gwája pass, and traversed through the pass. He says this pass is but little known, but has always been the Kafila route. Colonel Sankey had improved it and made it a very good road, about 22 miles long with fairly easy gradients ; its crest is some 700 feet lower than that of the Khojak, and native report, which says that the latter is closed every year after the first fall of snow, says that the Gwája has not been closed for 10 years. Captain Rogers visited what he believed to be the highest peak of the range, about 9,100 feet, and had a splendid view. He could see Quetta and some hills which the natives said were close to Kandahár. He carried on his traverse through the Gwája Pass *viâ* Haoz and Jaktipal to Kandahár, the points he had fixed from the Kwája range aiding him greatly. He says the country between the Kwája Amrán Range and Kandahár is full of hills and ravines, flat generally and very fertile in many places.

In December, 1878, a route survey with chain and plane-table was made by Captain R. Beavan of the Survey of India, starting from Madadalari G. T. S., near the Bhandawali Post, *viâ* Bugti Dera up to the point where the road emerges into the Katchi near Lehri.

At the request of General Stewart he then explored the routes on either side of the Bolán Pass with the object of finding an alternative route, and states that there is a fair track for camels from Naghesur by the Pashtal Valley to Kirta, up which a road might be made for carts at some expense, but no labour is obtainable in that part of the country.

There is also a route by the Mushkaf River from Sibi, or entering the hills by the Kumri stream near Dadur, over Takri Takht and down the Pishi stream into the Kirta (Laleji) Valley opposite Bibináni. This, however, crosses the range of hills which rise 400 or 500 feet above the plain on either side, and without tunneling it would be very difficult to make a road for carts.

The whole of the country is very stony, nothing underfoot but boulders and gravel with a small proportion of sandy soil. The hills are mostly in parallel ridges with stony plains intervening.

Captain Beavan then carried a route traverse up the Bolán Pass from

Dádur, closing on the bungalow at Darwáza. He was obliged to leave off at this point owing to want of water and absence of food for the camels. He commenced again from Quetta and carried on a traverse through the Gwája Pass towards Kandahár, by the same route as Captain Rogers, in rear of the advanced force under General Stewart, continuing it on to Girishk and thence back to Kandahár by another route through Yikchal, Kak-i-chopan, Khushki Nakhud, Atah Karez, Hadi Madat and Sangzuri.

This route survey from Quetta to Girishk has all been plotted on the scale of 1 inch to a mile, with as much detail on either side as could be managed, and a reduced map on the scale of $\frac{1}{4}$ inch to a mile has also been completed.

A survey of the route from Chaman, at the foot of the western side of the Khojak Pass, to Kandahár, *viâ* Gatai, Mel Manda, Abdul Rahman ka Kila and Mand Hissar, in all $77\frac{3}{4}$ miles, was made by Lieut. J. Hobday, s. c.

From Quetta, Lieut. Gore, R. E. was engaged about the beginning of March in making a survey of the Pishin Valley on the scale of 2 miles to an inch, assisted by Captain Maitland of the 3rd Sind Horse, Assistant Field Engineer. This survey is based on an independent base near Gulistán Karez and connected with Captain Rogers' triangulation in the neighbourhood of Quetta.

Lieut. Gore describes the Pishin Valley as practically dead flat and upwards of 25 to 30 miles wide. He had some difficulty in obtaining suitable points, as there is a singular want of well-defined and recognisable peaks on the borders of the valley itself. On the eastern side of the valley along the foot of the Ajiram range the ground is greatly broken and cut up, water is scarce and the country is inhabited by nomad Kakars.

In conjunction with Captains Heaviside and Holdich, Lieut. Gore fixed points across the northern end of the valley, in order to connect his work in Pishin with the survey of the Thal Chotiali Route made by the latter officers.

Early in April, Major W. M. Campbell, R. E went from Quetta with a detachment to Shoráwak and made a route traverse with compass and perambulator of about 157 miles through Ispintáza, Hisábat, Bádalzái, Zabardasht, Shoráwak Karez, Iltáz Karez, Issurkai, Ispinkai, Chichizai, Showd, Panchpai, Shorad, Khanak, Barg and back to Quetta. This traverse, though rather rough, is valuable as being almost all through nearly unknown country, and it helps to mark some very important features, for instance, the edge of the great desert, the course of the Lora, the Khán's boundary &c. It gives the position of several ranges of hills and a fair idea of their nature and direction for some miles on either side.

Major Campbell was also able to make observations for latitude and longitude at several points and to connect his traverse by triangulation with reference to one of Captain Rogers' points, Chiltán, a high peak near Quetta and visible at great distances.

On his return to Quetta Major Campbell arranged with Capt. Rogers for determining by telegraph the difference of longitude between that place and Kandahár.

Shortly after the arrival of the army at Kandahár Captain Rogers accompanied the expedition to Khelát-i-Ghilzái and on the march carried on his traverse continuously, fixing as far as possible the positions and general features on each side of the Tarnak River. The Force marched up the right bank keeping near the river; the hills on both sides, Captain Rogers says, are pretty continuous, smaller and more broken up on the left bank and approaching more nearly to the stream. On the right bank the hills are more continuous and are from 6 to 10 miles from the stream; a succession of high rolling mounds interpose between them and the river, sometimes receding and allowing a small strip of fertile country to interpose and sometimes coming right down to the river bank.

The road winds along the foot of these mounds and a good view of the hills is difficult.

He was not able to say if this undulating country extended up to the hills; but, judging from the country near Khelát, which he explored more thoroughly, he would say it did not, but that between it and the real hills there were valleys and villages.

At Khelát-i-Ghilzái Captain Rogers fixed points to help in the survey of the country around. Colonel Sankey, Chief Engineer, employed some of his officers on a large-scale survey round the Fort, and Lieut. Ollivier, R. E. and Captain Sartorius of H. M.'s 59th Regt. were told off to work in connection with Captain Rogers further out. Owing to military reasons Captain Rogers was not able to go far, and did not cross the river to any distance until a few days before the Force left, when he got on a high hill south of Khelát and had a view towards the Arghasán Valley, which does not seem to be at all the chaos of indiscriminate hills entered on the maps; in fact in one direction he could see an opening of considerable width down which he could not detect a single hill with a telescope. Thanks to the exertions of Captain Chapman, Assistant Quarter-Master General, they were able to considerably improve the geography of the country. Supplied with points by Captain Rogers, Captain Sartorius made a topographical sketch of the country around Khelát and towards Ghazni. A small force went down the Arghasán Valley with directions to survey as much as possible. This expedition did not, however, bring in much as it degenerated into a simple route survey without any information 200 yards from the line.

Captain Rogers got leave to go down the Arghandáb Valley with a small force. He had with him Lieut. Ollivier, R. E., and did a fair amount of survey, about 400 square miles up to Kandahár. He describes the country as one vast conglomeration of hills and mountains very difficult to work in. The Arghandáb River is a large rapid mountain stream running in many cases between perpendicular cliffs; it is impossible to follow its course for more than a few miles at a time, it has numerous side streams along which are strips of fertile ground and villages. The halts are at these and the marches are generally up or down these side valleys and then over the intervening ridge into the next valley. Nearer Kandahár the hills are less continuous and the ground more open. The Survey party got on fairly well with the people, who brought in supplies and got well paid for them, but was unable to move without a strong escort as the people were not to be trusted. Captain Rogers says that so far as he has gone the distances and the positions of places such as Kandahár and Khelát are very fairly accurate, but the hills and general ideas of the country are faulty and require correction. For instance the part round Khelát-i-Ghilzái is entirely wrong. The Arghasán and Arghandáb Valleys are almost a blank. On the whole he thinks the Arghandáb Survey will be a good addition to the knowledge of the country. The route survey he made from Quetta to Khelát-i-Ghilzái is seemingly a repetition but, possibly, an improvement.

After the return of the expedition to Kandahár from Khelát-i-Ghilzái, Captains Heaviside and Rogers, R. E. were employed along with other officers of the Survey in making a survey of the country 12 miles round Kandahár on the scale of 1 inch to the mile, and several officers from different corps were appointed Assistant Field Engineers to take up the detail survey with plane-table.

Captain Heaviside has given an interesting account of Kandahár: he says it lies in a valley about 35 miles long, east and west, by 7 miles broad. The country to the east is a flat stony plain; to the west and south-west an area of some 40 square miles is thickly populated with numerous villages and a net-work of mud walls, orchards, and irrigation channels with but few roads, and what there are, narrow, tortuous, and more or less flooded by field irrigation channels.

Of the hills those to the north and north-east, distant 5 or 6 miles, are lofty and precipitous, completely shutting out the country beyond: those to the east though lofty are far distant. To the south-east there is a low short range, distant about 8 miles, over which glimpses of the country towards the Khojak Pass are obtained. To the south and south-west the country is open and the desert is seen as an elevated plateau. On the west there are sharp-peaked narrow ranges a good deal broken up, distant 4 or 5 miles, which become even more isolated and broken to the north-

west, and it is here that there are passes into the Arghandáb Valley whence the water is brought in which irrigates the Kandahár Valley. The water of the Tarnak is not, so far as he had seen, used for irrigation as it runs at too low a level. The city is built for the most part of mud and of sun-dried bricks, so little masonry is there about it; but it is built solidly, with walls 4 or 5 feet thick, on a large scale, and in the dry climate the weather does not very seriously affect even mud.

The high massive walls of the city appear in excellent order from outside, and it is only when one comes inside and stands on the tower of the citadel that the dilapidations become striking, and one comes to the conclusion that, with the exception of one or two mosques and a mausoleum, Kandahár is at least very much out of repair. The citadel is a palace with all the accessories of court-yards and stables on a large scale, surrounded by a high massive wall and ramparts of its own. The buildings in the citadel in many cases are of three and four storeys: the walls very thick, the rooms low and small, connected by numerous dark low passages with curious deep recesses, probably for servants; most of the buildings have well-lighted underground rooms—prophetic of great heat.

The bazar contains many good things of a certain class, and is crowded all day. The inhabitants treated the troops outwardly as if they were used to them, neither glad to see them, nor displeased at their being there, and they were at least ready to sell them anything.

There are excellent cheap sheepskin coats and stockings, *chogas* of *pashmina* and of capital close felt, which appears to be a Kandahár *specialité:* old British uniforms of all kinds, but very little English cloth, Manchester or other. The copper-work in pots and pans, the iron agricultural implements, the earthen-ware drinking and eating vessels all exhibit more finish and more artistic feeling than those of the Hindus. The leather too is much better prepared than in India, though there is still the same weak sewing.

But the feature as compared with the bazars of Hindustán is the variety and quantity of the food exposed for sale: fried fish and *kabobs*, stewed fruit and curds; the Kandahár bread, an excellent light flat cake; carrots, spinach and watercresses; while the stalls for the sale of raisins, almonds, dried figs, apricots and such pomegranates as Captain Heaviside had never seen before, were as common as public-houses in London.

In April, a party of surveyors, consisting of Captain Rogers and Lieut. Hobday with Captain Sartorius, 59th Regt. and Lieut. Baynes, 60th Regt. Asst. Field Engineers, accompanied a column going for revenue into the country north of Kandahár between the Arghandáb River and the hills of the north side of the Khakrez Valley, and the survey of this and adjacent valleys was carried out as the movements of the troops allowed, the northernmost limit being Asub Kila, or Gandáb, about 36 miles from Kandahár.

About 500 square miles were plane-tabled by Lieut. Hobday and Captain Sartorius on the ¼ inch scale ; a route survey carried on on the 1-inch scale by Lieut. Baynes, and a number of points fixed trigonometrically.

Lieut. Hobday says, that they found the people in the Khakrez Valley quiet and amenable enough. There was a fair sprinkling of villages and cultivation, and water plentiful. They came across a fair-sized plateau at an elevation of about 7,000 feet, with wild rhubarb, onions, and water-cresses in abundance. The elevation of the valley is much higher than that of Kandahár, and they consequently found it much cooler and got away from the flies. They also came across lead, iron, copper and crystalite.

At Girishk, Captain Beavan made a large-scale survey and completed a map of the position at Girishk and passage of the Helmand on the scale of 4 inches to the mile, including about 20 square miles of the Helmand Valley with the Fort and military position. He also determined the position of numerous hill peaks.

After his return to Kandahár he completed a survey of the new cantonment on the scale of 16 inches to the mile, and at the end of April was engaged in carrying on a general survey of the cultivated land adjoining the city of Kandahár on the scale of 4 inches to the mile.

When it was determined early in February to withdraw a part of the Force by the Thal Chotiáli route under the command of General Biddulph, Captains Heaviside and Holdich, R. E., were appointed to accompany the Force as Surveyors, Captain Heaviside taking charge of the triangulation, and Captain Holdich of the topography.

Before starting, Captain Heaviside proceeded to the Kadanai Valley, where he measured a base line and carried a triangulation across the valley to the Hadah Hills and thence fixed several points to the North, East and West.

Captain Heaviside remarks that the name Ghanti given to the range between the Khojak Pass and Kandahár should be erased. The name is unknown and has probably been confused with the Ghetai Hills. It is very difficult to obtain correct names in Afghánistán, but from the Kadanai Valley the highest hill of the range is called Hadah ; it rises 2,500 feet above the valley and scarcely deserves the name of a mountain in this part of the country.

Captain Holdich joined Captain Heaviside in the Kadanai Valley on the 26th February, and notwithstanding the thickness of the atmosphere and inclemency of the weather was able to sketch in on the plane-table a fair portion of the valley. These two officers re-crossed the Khojak on the 6th of March by a capital road with easy gradients which had been recently

made, and Captain Heaviside was able to connect his Kadanai work with the Khojak points, but only by staying on the top for several hours waiting for breaks in the alternations of dust and showers below and snow above. From these points he carried a connection by triangulation across the Pishin Valley to Khushdil, but with great difficulty owing to the heaviness of the weather. Captain Holdich at the same time carried on his plane-tabling on the basis of two or three points fixed by Captain Rogers near Quetta, also on points obtained from independent bases, and occasionally from the traverse work with compass and perambulator, which was continued steadily through from camp to camp. From Balozai, two marches beyond Khushdil, he made a reconnaissance southwards with Col. Brown, R. E., to Gwal and Amadún, while Captain Heaviside accompanied General Biddulph on a reconnaissance to the head of the Zhob Valley.

Leaving Balozai on the 24th of March, the Thal Chotiáli Force marched nearly due east through Eusaf Katch to Spirargah. The route led chiefly up the bed of a main tributary of the Surkháb river over the Ushtárah Pass 8,000 feet high. The scenery about this pass was quite Alpine in character: the camp was pitched at the foot of a fine snow mountain, the hill sides were fairly clothed with a species of juniper, while the extraordinarily varied and brilliant colouring of the soil lent additional charm to the scene and was a pleasant change from the monotony of flat treeless valleys and bare rocky hills that characterised the country between Kandahár and Quetta. From Spirargah the Force marched over the Momangai Pass (8,500 feet) to Oboskoi, Chimján and Ningán where the Bori Valley was struck. From Ningán, the line taken lay north of the route through Thal and Chotiáli pursued by the 1st and 3rd columns, and the Bori Valley was followed and for a distance of 30 miles was found to be wide and open, well cultivated and more prosperous looking than anything they had seen since leaving Kandahár. This valley was quitted three marches beyond Ningán where the Anambár river passes through a gap in the range bounding the valley to the south. The Khru mountain which overhangs this gap was ascended in the hope that some points on the Sulimán range would be seen therefrom, but this expectation was disappointed. A connected triangulation had been carried on to this point, but triangulation had now to be dropped and the Survey carried on solely with the plane table, checked by traverses and Astronomical latitudes. Leaving the Anambár gap (3,800 feet) the Force, instead of following the Anambár river southwards to Chotiáli, marched to the south-east, crossing the Trikh Kurram Pass (4,200 feet) and thence into the Chamálang Valley in two long marches. From Chamálang the route led due south over the Hanukai Pass (4,400 feet) to Balladaka, and thence over the Han Pass to the Kaho Valley. Between Anambár and the Kaho Valley the country is

rugged and the valleys even uninhabited owing to disputes amongst the neighbouring tribes. Lugári Barkhán (3,500 feet) in the Kaho Valley, about 10 miles above Vitákri, was reached on the 8th of April, after a march of 190 miles in 16 days.

Captain Holdich sums up the results as 5000 square miles of ¼ inch mapping, 270 linear miles of traverse on the 1 inch scale, and several plans of sites &c. The mapping includes the heads of the Pishin and Kadanai Valleys and a good margin beyond the country actually mapped, of which the geography can be very closely conjectured, so that the south-east corner of Afghánistán may be said to be known. Captain Holdich also says that there is a more northerly route which he would have liked to have explored; the real high road, as he believes, to Kandahár, and even better and straighter than the Thal Chotiáli route, good as that was found. This route leads *viâ* the Zhob Valley and the Karwaddi Pass, of which at present only native information is available. A railway could be run without difficulty along the route followed by the Survey.

After the Thal Chotiáli Force returned to India, Captains Heaviside and Holdich remained a month at Fort Munro on the Sulimán Range and were enabled while there to connect two Trigonometrical points on the range with several points to the west along the route they had come by, thus leaving a gap in the triangulation of less than 30 miles.

On the 10th May Major Campbell and Lieut. Gore accompanied Captain Wylie, the Political Officer, from Alizai on a reconnaissance to the Toba Plateau on the north of the Pishin Valley. The first camp, Arsala ka Masjíd, 10½ miles from Alizai, is in a *nala* about half way up the pass; 9 miles further, on the top edge of the plateau, at an elevation of 8,000 feet, they camped at Mandan, which is the name of the district and stream, though there is no village. Two marches further on they reached Haji Khán ka Kila, the extreme north-east point of their route. The country passed through is at first undulating, running into hilly towards the north. Major Campbell remarks that the name of what is called "Toba Peak" on the map is 'Kand.' The expedition marched back through Kakar Toba into Achakzai Toba, going *viâ* Sábur, Drajandar, Kurak, Gwal (one of Captain Holdich's points) and Ghan Oba, where they left the hilly ground and entered the open plain country called 'Tobin,' which lies west of Toba and borders the Kadanai Valley. It is the more extensive plateau of the two, but water is scarce. Hence they went to Sina across the plain over the ridge of the Khojak Hills (north of Pass) and down the Bogra Pass into the plain of Kadanai. Lieut. Gore says the upper part of the Bogra Pass into Kadanai is very steep and bad for camels for about ¼ mile, after that it is a good road.

The expedition was to go a short way up the Kadanai Valley, then up another road into Tobin, returning to Pishin by the Arambi Valley, quite a different route to that they went by.

The results of the Survey with this Column up to the end of May may therefore be summed up as follows:

Route Surveys from the Bhundowali Post to near Lehri, and from Dadur to Girishk.

Survey of the Bolan Pass and neighbourhood.

Survey round Quetta.

Survey of the Pishin Valley and reconnaissance of the Shorawak valley.

Reconnaissance of the Arghandáb and Arghasán Valleys from Kandahár to Khelát-i-Ghilzái.

Survey round Khelát-i-Ghilzái.

Surveys round Kandahár.

Survey round Girishk.

Survey of the Khakrez Valley.

Reconnaissance of the Kadanai Valley and survey of the Thal Chotiáli Route.

Reconnaissance of the Toba plateau and neighbouring country.

Captain Heaviside has given the approximate latitudes, longitudes and heights of the following places on the Thal Chotiáli Route, based on Captain Rogers' values, *viz.* :—

	Lat.	Long.
Takatú, east peak highest, ...	30° 24′ 13″	67° 6′ 15″
Chiltan, southern peak, ...	30° 1′ 11″	66 48 42
Khojak, east point, ...	30 51 33	66 33 54
Kwája Amrán, ...	30 39 30	66 24 45

Height of Quetta 5,500 ft.

The heights are aneroidal, and the passes are probably made a little too high.

Major-General Biddulph's Route.

	Lat.	Long.	
Khushdil (Pishin Valley),.....	30° 42′	67° 5′	Height 5,100 ft.
Suranari Pass, ...			7,000 „
Balozai, ...	30 38	67 18	6,300 „
Metrazai Pass, ...	30 45	67 30	7,100 „
Ushtárah Pass, ...	30 36	67 32	8,000 „
Momangai Pass,.....	30 34	67 42	8,500 „
Chimján, ...	30 34	67 57	7,200 „
Ningán (Bori Valley), ...	30 27	68 23	5,350 „
Anambár Gap, ...	30 21	69 2	3,800 „
Chamálang Valley,.....	30 9	69 26	3,800 „
Hanukai Pass, ...			4,400 „
Han Pass, ...			4,800 „
Nahar Kot (Lugári Barkhán),	29 46	69 27	3,500 „

Major Sandeman and General Nuttall's Route.

Chimján as above, ...	30° 16′	68° 17′		
Smalan, ...				
Sagawe, ...	30 17	68 20	Height	5,500 ft.
Baghao, ...	30 16	68 29		4,800 „
Rehi, ...	30 9	68 35		3,900 „
Tal, ...	30 1	68 43		3,200 „
Chotiáli, ...	30 2	68 54		3,300 „
Baramzai, ...	29 59	69 14		3,750 „
Nahar Kot, as above.				

Balozai and Metrazai are in the Surkháb ; the latter place being on the watershed at the head of the Surkháb and Zhob Valleys.

Since the above values were determined, Mr. W. C. Price has carried a triangulation from the Indus Valley Series across the Sind desert and up to Quetta. This connexion will enable the fair maps of Southern Afghánistán to be compiled on a base as rigorously accurate as other portions of the Survey of India.

II. Kuram Valley Column.

The Kuram Valley Force, under Major-General Roberts, C. B., V. C., being smaller than the others, the Survey operations have also been on a less extensive scale than those with the other two columns and have been confined almost entirely to the Khost, Kuram and Hariáb Valleys. From November 1878 to March 1879 Capt. Woodthorpe, R. E., was the only officer of the Survey of India present with the Column, but Lieut. Manners Smith, Adjt. of the 3rd Sikhs, was attached to the Survey party in November to accompany and assist Capt. Woodthorpe, and in March Lieut. Gerald Martin, of the Survey of India, also joined the party.

Capt. Woodthorpe had the great advantage of being in close and direct communication with Genl. Roberts and of accompanying him on all expeditions and reconnaissances, and thus had every opportunity for seeing and surveying as much of the country as was practicable under the circumstances.

Capt. Woodthorpe accompanied the Force in the rapid advance in November 1878 from Thall to the Peiwar, partly along the right bank of the Kuram River, *viâ* Kapianga, Ahmed-i-Shamu, Esor, Hazár Pír, the Darwáza Pass and Kuram, plane-tabling along the route. He took part in the military operations of the 28th November and 2nd and 3rd December, and had a very narrow escape during the action on the 2nd.

He had gone forward with the advance when they reached the stockades on the Spin Gawai at dawn ; and when all the enemy had been driven out he returned with a message from Colonel Brownlow of the 72nd to the

General, who asked him to take back a reply. He was returning by the route he had just traversed, quite alone, and had left the breastwork where the rest of the 72nd were sheltering about 48 yards in rear, when he saw some 30 men occupying the crest within a few yards of him, and in the grey light he mistook them from their dress for some of the men of the Force going up in support of the advance, and, on the other hand, the enemy did not recognise him till he was within 6 yards of them and then fired upon him. A bullet struck him on the left side, completely carrying away the whole of the wood of his pistol stock, tearing his clothes, singeing his side and driving a piece of his clothes into the middle of the note-book in his breast pocket and spoiling several sketches.

He fortunately succeeded in regaining the breastwork amidst a storm of bullets, notwithstanding that he tripped and fell heavily down-hill about half-way.

After the battle he made a reconnaissance of the scene of action. He then went on with the Force into the Hariáb Valley, marching and plane-tabling through Ali Kheyl and Rokián, and was able to well delineate all the valley and as far as Rokián. From Rokián he was only able to carry on a route survey to the Shuturgardan, the valley being too narrow to admit of plane-tabling, and visits to places on either side were impossible. He was able to fix the Shuturgardan with sufficient accuracy and found it to be a good deal south-east of the position assigned to it on sheet No. 4 of the Atlas of India. The river a few miles above Rokián runs north-east from the Surkai Kotal instead of rather south-east, as in the map. Capt. Woodthorpe says that the old map is exceedingly accurate as far as the Peiwar, on the north bank of the river, but he has been able to improve it a little. On returning to Ali Kheyl, he visited the Matungeh Hill, a peak about $4\frac{1}{2}$ miles north of Ali Kheyl, about 12,900 feet above the sea, Ali Kheyl being 7,300. From Ali Kheyl he returned with the Force, marching and plane-tabling through Chapri and Karaia in the Mangal country, to Kuram. On passing through the Mangior defile between Chapri and Kuraia on the 13th December, the baggage and rear-guard were attacked by Mangals.

Shortly after the return of the Force to Kuram, Capt. Woodthorpe and Lieut. Smith visited the Safed Koh, riding out from Kuram to some villages called Zerán, where they picked up a Turi guard, having also some Gúrkhas with them, and also had to change their mules for coolies, as they were told the mules could not go very far. They had, however, to take on the mules belonging to the Guard, as sufficient coolies were not procurable, and these mules got up within 2000 feet of the pass and would have gone right up, but there was no camping-place further on till the ridge was crossed and the road had descended again some distance towards the

plains. The route they followed was the regular Jelálábád road up which the Turi mules always go. They met a large number of unarmed traders coming in from Jelálábád. They reached a point about 13,600 or 14,000 feet high, but could not reach the highest point—Bodin Peak. The ridge was very steep and difficult and the path over snow-fields. From the point they reached they had a good view of the Fort at Kuram and all the peaks towards Khost. It was bitterly cold up there but they got angles to all the peaks they wanted.

Early in January the Survey party accompanied the expedition into the Khost valley, marching *viâ* Jaji Maidan, Bakk Akubi to Matún. From Matún Capt. Woodthorpe explored the valley to the west, in the direction of Degán, and also accompanied a signalling party to a hill on the water-shed between the Shamil and Tochi rivers, near the small Wazirí village of Nandir, and commanding an excellent view of the surrounding country. From this point heliographic communication was established with Bannu and Hazár Pír. On the 27th January the Force left Matún, marching back to the Kuram *viâ* Sabari, Esor, Hazár Pír and Ibráhímzai. During this expedition the greater part of the Khost valley was surveyed and mapped on the $\frac{1}{4}$ inch scale, the part wanting being at the extreme west.

After the return from Khost the survey party was engaged in making a route survey with plane-table and perambulator of the new road to Thall, *viâ* Ibráhímzai, Hazár Pír and Ahmed-i-Shamu; Capt. Woodthorpe also visited the Shobakgarh Range and fixed the position of the pass through that range to Khost.

About the middle of April the Survey party accompanied the Force to Ali Kheyl and remained there, surveying in the neighbourhood of the Peiwar, till the end of the month, the snow being about 18 in. deep on the hills at the time, and the weather very stormy and unfavourable for work.

Capt. Woodthorpe, accompanied by Lieut. Martin, paid a second visit to the Matungeh Hill, near Ali Kheyl, but they were disappointed in not being able to see and communicate with Gandamak, for which purpose signallers had accompanied them. They had a fine view, seeing far away into the plains near Ghazni and also to the Shuturgardan Kotal. The last 1500 feet of the ascent was very trying, on account of the snow with which the hill was covered and a biting cold wind that was blowing at the time, but notwithstanding this they managed to get through a good deal of work before returning to camp in the evening.

At the end of April Capt. Woodthorpe and Lieut. Martin went from Ali Kheyl *viâ* Belút to make a reconnaissance of the Lakarai Pass at the request of General Roberts.

From Belút the road lay along the bed of the Lahdar or Naridar stream

for some seven or eight miles, passing between thickly-wooded spurs of the mountains. It then winds up the spurs towards the Kotal, among the pines and here begins to be somewhat steeper, until it arrives at a small saddle from which to the Lakarai itself the slopes are somewhat slighter. From a little below this saddle to the Kotal the snow was very deep, 2½ to 3 feet. On the north side it was deeper still, and sometimes lies 7 to 8 feet thick. The height of the Kotal is about 10,600 feet.

They crossed the Kotal and continued some little distance down to where they could get a fairly good view of the river-bed and the villages below. The part of the road near the Kotal is called Mangal Tangi and the villages in the valley are Gabar Mangal. They are Taghan, Langar Kila, Sirkoti and Nazir Mahomed.

The nearest is Taghan, about five or six miles from the Kotal, and is a fairly large village. They were unable to go down to this village, partly because it was getting late and partly because the villages were unfriendly. They could see the tops of the Jizin and Jagdalak Hills and, as at Matungeh, some of Major Tanner's points, but the height of the Safed Koh on the right and the hilly nature of the country in front prevented their seeing Gandamak or Jagdalak. Lieut. Martin was also able to see the other side of the Safed Koh and so check, correct and add to the work he had done at Matungeh. The weather was very cold with a wind which almost made their fingers too numb to draw. Lieut. Martin gives a very graphic description of the beauty of the scenery, which he describes as quite Alpine.

During the month of May reconnaissances were made to the Sirkai and Shuturgardan Kotals; to the Zarrazod Peak, near the Mangior Pass; to the Istiar Pass and head of the Mangior defile, looking over the Ahmed Kheyl country; to the Kafirtaga Hill and to the Naktek Peak, over the Ahmed Kheyl and Lajji country, on which occasion a good deal of work was done and the positions of the Ahmed Kheyl and Lajji villages fixed, and a good deal of the topography between Ali Kheyl and the principal part of the Kuram sketched in as well as the ranges and principal water-courses on the opposite side.

Lieut. Martin gives some interesting details regarding the course of the Kuram river. There are two principal sources. One rises near the Shuturgardan, flows east and then south; the other rises in the Peiwar range, flows west and meets the former at Ali Kheyl and continues along with it in that direction until it arrives at the Ahmed Kheyl *great* village. Here the bed narrows and the closeness of the rocks gives it the name of "Tangi." This is the spot where the river suddenly turns south into a

mountainous land; and here the Ahmed Kheyls have a fort and stop and rob travellers to Ghazni or those going by the Spiga Kotal to Kábul, and on this account (so he was informed) this road, though the best and shortest to Ghazni, is generally avoided. The Umar and other hill streams here join and all flow together through a very mountainous rugged country. This part of the Kuram then turns sharply eastwards and flows on towards Kuram itself. In this portion of its course myriads of mountain streams and torrents feed it and thus it increases in size rapidly. From the joining of the Ali Kheyl and Umar until it comes into the Kuram Valley its course is through a very mountainous country inhabited by various robber tribes, Mangal, Ahmed Kheyl and Lajji.

On the 20th June Capt. Woodthorpe and Lieut. Martin, accompanied by other officers of the force and a party of signallers, ascended the Sikarám Peak (15,600 feet) on the Safed Koh, which had been already ascended by Mr. G. B. Scott, of the Survey, attached to the Pesháwar Column. Unfortunately the day was hazy and they were unable to see or do so much as they had expected.

The area surveyed by this party may be roughly estimated at 4,500 square miles and has been mapped and published on the scale of 4 miles to an inch.

III. Pesháwar Column.

The Survey operations with the Pesháwar Column, though not extending over such a length of country as those with the Quetta Column, have, perhaps, been more productive in new work, owing to circumstances having permitted a more complete survey of the country on either side of the route traversed by the Force than could be accomplished with the Quetta Column.

Five officers of the Survey Department—Major H. C. B. Tanner, B. S. C., Capt. E. W. Samuells, B. S. C., Capt. E. P. Leach, R. E., Capt. C. Strahan, R. E. and Mr. G. B. Scott, were employed from time to time during the occupation of the country by the British troops.

Of the operations connected with the earlier part of the campaign, the information furnished by the Survey Officers is unfortunately scanty. The results, however, speak for themselves.

Major Tanner completed a Military reconnaissance of the country between Jamrúd and Jelálábád on the scale of 1 mile to the inch. Nearly the whole of the portion between Jamrúd and Dakka, including the routes taken by the three brigades, was surveyed on the 2-inch scale by Mr. Scott, and afterwards reduced to the 1-inch scale in Major Tanner's office.

Major Tanner also made a reconnaissance on the scale of 1 inch to the mile of the hills lying to the immediate south of Dakka.

Capt. Samuells greatly distinguished himself at the taking of Ali Masjid by carrying on his survey under a heavy fire. Very shortly afterwards he was attacked with typhoid fever and died at Pesháwar on the 21st December, 1878.

Between the 1st November and 5th February, Mr. Scott had nearly completed a plane-table survey of 320 square miles-lying between Lat. 33° 55′ and 34° 15′, Long. 71° and 71° 30′, comprising most of the country south of the Kábul river between Dakka and Fort Michni to the north, and in the neighbourhood of the Khyber and Bázár Valley to the south.

He was then called on by Major Hastings, the Deputy Commissioner of Pesháwar, to survey the portions of the Shinilo and Hyder Khán Kafilah routes to Dakka which he had not been able to complete before, and also to survey certain additional portions of the Kábul River. Whilst engaged on this work he and his party, which consisted of a few *kalashis* and a guard of 20 Sepoys and 2 non-commissioned officers of the 24th Panjáb, N. I., were attacked by a strong party of Momunds and a hand-to-hand fight ensued. Mr. Scott displayed great gallantry, coolness and good judgment on the occasion, and probably saved the whole party from destruction, as has been cordially acknowledged by the Panjáb Government and by His Excellency the Viceroy and Governor-General in Council.

Capt. E. P. Leach, R. E., joined the Force in January and did good service for about two months in surveying the Bázár Valley and a good deal of the country round Jelálábád, chiefly in the Shinwári country on the northern slopes of the Safed Koh. He was attacked on the 17th March by some Shinwáris, while surveying near the villages of Maidanak and Girdi, and received a severe wound on the arm, which obliged him to return to Pesháwar.

Capt. Chas. Strahan, R. E., replaced Capt. Leach in April and was employed in surveying the country in the neighbourhood of Safed Sang and to the north of the road between that place and Jelálábád.

On the occasion of the first expedition into the Bázár Valley by the Column under General Maude on the 20th and 21st December, Mr. Scott accompanied the Force and surveyed along the route. During the second expedition of the 21th January and subsequent days he again accompanied General Maude's Column *viâ* Burg to China and completed a survey of the eastern part of the Bázár Valley and the scene of action towards Bara, while Capt. Leach, who accompanied General Tytler's Force from Basáwal *viâ* Chunar and Sisobi to China, returning from China to Dakka over the

Sisobi Pass *viâ* Chunar, did a good deal of survey in the western part of the valley, and was able to fill in a considerable portion of the hill tract between Dakka and the Sisobi Pass, the position of which was accurately fixed.

While the Force remained in the valley no surveying beyond the immediate vicinity of the camp at China could be undertaken, nor any exploration made towards the Bara and Tirab Valleys, the Zakha Kheyls at once opposing the advance of any reconnoitring parties in those directions.

Capt. Leach remarks, as the result of observations on this expedition, that the passes over the Safed Koh apparently exist at intervals of 5 to 10 miles, and the one they crossed—the Sisobi—was under 5000 feet and a comparatively easy one for camels.

The higher ranges of the Safed Koh are fairly wooded, but the Kábul river runs through a bare stony plain from Jelálábád to the Khyber, and cultivation is very limited.

The most notable feature of the country is the elevated valleys which are composed entirely of beds of conglomerate brought down from the main ranges, and which rise gradually several thousand feet before the steeper slopes like those of the Himalaya commence. It is difficult to explain the formation, but it presents all the appearance of a sudden disintegration of the mountain ranges by volcanic action, the drainage lines cutting out broad channels in the most erratic manner over the deposit thus formed, and the spurs apparently having been half-buried by the immense masses of loose stone.

The route between Dakka and Jelálábád was surveyed by Major Tanner, the survey comprising nearly all the country between the road and the Kábul river and the villages 2 or 3 miles to the north of the river, and it was afterwards added to, chiefly towards the south, by expeditions from Jelálábád.

Capt. Leach, writing in January of the route between Dakka and Jelálábád, says that the country is disappointing and the fertile valley of Jelálábád, so far as he could see, was a myth. There are few trees and for several miles to the south of Jelálábád there are undulating ranges of low hills with broad expanses of waste land covered with stones. This is the character of the road the greater part of the way from Dakka, and the tract of country it passes through is to all appearances a continuous river-bed. Round Jelálábád itself there is a certain amount of irrigated cultivation, but the camp and roads were deep in dust and there is absolutely no vegetation on the hills.

Various attempts were made to explore the hitherto unknown tract of country lying along the northern slopes of the Safed Koh range to the

south of the Kábul river between Basáwal and Jelálábád. Regarding this tract Capt. Leach says the valley proper extends about 10 miles on the southern side of the Kábul river and is fairly level, then comes a belt of low broken hills inhabited by the Shinwáris and then the main spurs of the Safed Koh Range which, in many cases, run nearly parallel to the main range and not at right angles, as shewn in existing maps.

The first of these expeditions was made by Major Tanner and Capt. Leach to the Shinwári village of Mazína, 14 miles south of Jelálábád, with a view to proceeding as far as possible towards the slopes of the Safed Koh and surveying the entrances to the Papin and Ajam passes ; but as the Khán of Mazína refused to be responsible for any further advance into Shinwári country, the expedition had to be abandoned. Major Tanner was, however, able to fill in the drainage and low hills between Háda and Mazína, and he remarks that the country between Háda and the Mazína upland is intersected by numerous watercourses all paved with round boulders. The plain and broken ground between them is also thickly strewn with shingle and boulders, but after ascending a slight pass to the east of Za Khel, they suddenly found themselves in a beautiful plain highly cultivated and with forts and clumps of trees on all sides. The Safed Koh were but 10 miles off, with the valleys and slopes covered with beautiful pine forests. Between them and the foot of the mountains intervened more shelving stony ground with undulations that hid the cultivated lands of Deh Bala (the high village) from them. The cultivated lands stretch from Mazína northwards to Sher Sháh and almost reach the arid tract near the Chorazali road. Mazína is some 1200 feet above Jelálábád.

Early in March Capt. Leach received permission to survey over the old route between the Safed Koh and the Kábul river, followed by Burnes in 1839, confining his operations to the country eastward of Mazína. His first halting-place was at the Fort of a friendly Khán, 13 miles south of Jelálábád, and he had intended marching to Marhaiz, 9 miles further south and within 4 or 5 miles of the foot of the Safed Koh proper, whence he would have been able to get up to the lower spurs and snow-line, Marhaiz itself being 4000 feet ; but as the Khán who escorted Capt. Leach said they would be certain to be attacked if they camped at Marhaiz, he changed his plan and went to his old camp at Mazína, where he had another day's work in the same direction and managed to get near enough to fix all the Shinwári villages at the foot of that particular part of the main range.

Capt. Leach says the country is a difficult one to sketch without actual survey.

The main range is easy enough and its features tolerably regular, but the lower slopes are completely buried by a glacis of low broken masses of

conglomerate and sandstone, so that the gorges to the passes and all the defiles are invisible till one is close to them, and nearly all the villages are quite out of sight. These lower ranges are generally detached and the valleys, or *daras*, are several hundred feet below them. He followed one of these *daras* down to its junction with the Kábul. For mile after mile they passed through a continuous belt of cultivation, thickly studded at every quarter of a mile with tidy-looking forts and showing every sign of comfort and prosperity.

Ascending either bank of the stream one passed at once from fertility to absolute barrenness, and a few miles away from the *dara* it was almost impossible to make out its course or to trace its windings through the hills to the foot of the range.

On the 17th March Capt. Leach was surveying the slopes of the Safed Koh in the neighbourhood of the Shinwári villages of Maidanak and Girdi, from 16 to 20 miles south of Barikhab, when he was attacked by the villagers and after a hard fight succeeded in withdrawing his party and the military escort. In the course of the fight Capt. Leach was severely wounded by a sword-cut in the left arm, Lieut. F. M. Barclay, who was in command of the escort of 45th Sikhs, received a wound which proved mortal, and two men were killed.

A few days afterwards an expedition under General Tytler was sent from Barikháb against the Shinwáris who had attacked Capt. Leach, Major Tanner and Mr. Scott accompanying the expedition as Surveyors. Major Tanner visited the scene of the encounter and was able at a height of 4,300 feet to see many points north and west of Jelálábád that he had never before seen, especially the Hindu Kúsh near Bamian, and the same range north of his position. He finds that Fardjgan is not at the foot of the Hindu Kúsh, but at the foot of one of its spurs.

Mr. Scott also accompanied General Tytler to the attack on Deh Sarak, and on this expedition and that to Maidanak made a reconnaissance of about 120 miles of Shinwári country and the neighbouring slopes of the Safed Koh.

The long halt of the Army at Jelálábád enabled the Survey Officers to make the most of such opportunities as they had for completing the survey of the almost unknown country around, but as a rule they were unable to proceed further out than the limit of a day's ride out and in, and this prevented them from extending their explorations so far as they would have been able to do under more favourable conditions.

During December and January the survey operations in the neighbourhood of Jelálábád were much hindered by a persistent opaque brown haze which entirely blocked the view beyond a few miles. Luckily Major Tanner was able to fix his position the very morning of his arrival, other-

wise he would not have been able to determine the true position for several weeks. And this was of the more importance because Major Tanner found that the position assigned to Jelálábád on existing maps was erroneous and that its true position is Lat. 34° 29′, Long. 70° 30′, instead of Lat. 34° 24′, Long. 70° 26′.

To the eastward, north of the Kábul river, Major Tanner accompanied an expedition through Kama into the hilly country beyond Girdao. Kama is described as a thickly-inhabited alluvial tract, intersected everywhere by canals and studded with many fortified villages and forts.

Major Tanner surveyed the course of the Kunár river for about 15 miles from its junction with the Kábul river, and filled in the country to the north of Jelálábád between the Kunár river and the Kábul and Lughmán rivers, known as the Dasht-i-Gamberi, a waterless alluvial sandy plain, together with the hills to the north of it, to a distance of 16 to 18 miles from Jelálábád.

Major Tanner was also able to make a rough sketch of the Kunár Valley, filling in the names from native information. The course of the Kábul river, westward from Jelálábád beyond the Daronta Pass, was laid down to a short distance beyond its junction with the Lughmán River, about 14 miles from Jelálábád, and Major Tanner found that this part of the country was very erroneously delineated on the old map, the course of the Kábul River being placed many miles too far north.

On the occasion of the expedition to Lughmán under General Jenkins, the Lughmán river was traced by Major Tanner and Capt. Leach as far as Trigarhi, 26 miles from Jelálábád, and a fair survey was made of the Lughmán Valley from the Daronta Pass to the junction of the Alishang and Alingár Rivers. A more extended sketch, based upon trigonometrical points, was also obtained of the surrounding hills and heads of the above river valleys and extending westward to the Bád Pukht and Tang-i-Shaidán Passes. Observations were taken from a point 4,200 ft. on the Panchpai Range. The forces met with no opposition, and Major Tanner says that the people came in crowds round his plane-table, curious to see the English. He found the Tajik or Kunár language prevalent.

Accompanying a column under General Macpherson, Major Tanner surveyed the country between Jelálábád and Bahram Khán's Fort, going *viâ* the Tatang Pass, over the end of the Siah Koh Range, and returning along the foot of that range to Jelálábád *viâ* the Lakki Pass.

Previous to the advance of the army Major Tanner surveyed and fixed the course of the Surkháb River as far as Sultánpur, with all villages and many forts, thus completing the survey one march on the road to Kábul with all the country to the north of it as far as the Siah Koh Range.

On a subsequent occasion Major Tanner went to Sultánpur and surveyed a strip of the country south of the road, meeting nothing but a waste of stony hills and deep ravines. Low hills to the south prevented his seeing the cultivated tract and villages under the Safed Koh. It had been intended that he should survey Burnes' old route between Fathiabád and Chapriar and also that he should, if possible, visit and report on the bridge over the Surkháb river near Gandamak and also visit the old British cantonment at Kája, but unfortunately heavy rain stopped the work and the party were obliged to return to Jelálábád.

On the advance of the army to Gandamak, in April, Major Tanner, Capt. Strahan and Mr. Scott accompanied the Force and surveyed the road to Gandamak and the country north and south of it between the Surkháb and the Safed Koh, Capt. Strahan taking the northern portion and Mr. Scott the southern.

In the reconnaissance to Gandamak Bridge (Safed Sang) Major Tanner found that the topography of the old map was very inaccurate. The general slope of the Surkháb is about 200 feet per mile and in one part the gradient of the plain which reaches to the foot of the Siah Koh was a great deal more, hence the unexpected bends and turns the streams make in a country covered with ridges and hillocks, where the southern edge has been upheaved in moderately late times.

Major Tanner also made a reconnaissance to the Wara Gali Pass, over the Siah Koh Range, extending as far as the watershed. The pass is easy but rocky. The slopes of the Siah Koh are craggy and have only sparse scrub for about half a mile. Unfortunately the weather at the time was bad and no observations could be made to peaks to the north.

Capt. Strahan's particular work was the survey of the country between Safed Sang and the Surkh Púl and he made a really fair survey (much more than a sketch or reconnaissance) of about 80 square miles north of the road up to the Surkháb and got a good general sketch of the Siah Koh beyond, up to the crest of the first range.

Capt. Strahan remarks that the name Safed Sang (white stone) had not been written against the camp so-called, because there is no village of that name, which refers to some big white stone in the river there. The nearest village is Hashim Kheyl. He also remarks that the weather at Safed Sang at the end of April was very changeable, one day high wind with dust, then cold wind with rain or hail, then a hot sultry day, the latter being the rarest and the other two about equal. The thermometer rose from 85° to 95° maximum, and was about 58° minimum.

The valley at Safed Sang is of no great width, and all the low ground within easy reach of camp was mapped by Capt. Strahan with very fair

accuracy and detail. From four stations round about he was able to fix almost every prominent point in the Safed Koh and Siah Koh and also in the Karkacha range some 25 miles to the west.

As soon as he heard that the troops were likely to return to India, Capt. Strahan sent Mr. Scott to the Safed Koh with instructions to get in all the sources of the Surkháb as far as possible, and to fill in all up to that river south of the road which will form the limit of the Survey. He himself started for the Siah Koh and did two days' good work from two peaks from which he had a most extended view. From the first he could see beyond Kábul and the Hindu Kúsh, somewhere near the Khevak Pass, but the high peaks there and about Kohistán and Panjshir were cloudy. From the second peak he could not see in the Kábul direction, but picked up some peaks on the Hindu Kúsh and got second rays to two peaks in Káfiristán, somewhere about the sources of the Alishang and Alingár rivers. He intended to have visited a third peak but was ordered to go with Capt. Stewart of the Guides, to Ali Khcyl by the Lakarai Pass over the Safed Koh. This attempt unfortunately failed.

Mr. Scott got to the top of the Sikarám Peak, on the Safed Koh (15,622 feet), and did a great deal of good work, observing to one solitary peak in the Hindu Kúsh in a part of the range unseen by any of the surveyors before, as it was hidden by the Káfiristán hills.

The total area actually surveyed during the progress of the operations of the Pesháwar Column may be roughly estimated at about 2,500 square miles, a great part of which is quite new and the remainder correction of the old, incorrect and imperfect surveys. Besides the above 1,100 square miles were sketched from native information by Mr. G. B. Scott. It has all been mapped and published on the scale of 4 miles to an inch.

During his stay at Jelálábád, Major Tanner took the opportunity of studying many points of interest connected with the numerous antiquities in the vicinity and the languages of the people, chiefly of the Káfirs.

At Háda, about five miles south of Jelálábád, he came across a splendid subterraneous palace of the old Káfir kings, known as the Palace of Oda, Hoda or Hodé Rájá, and had it excavated, finding several beautiful plaster heads and fragments.

He made some study of the language spoken north of the Kábul river, through Kunár, Lughmán, Kohistán &c. He says it has a most perfect grammar and is an Aryan language, he thinks very old and pure, and allied to that of the Káfirs, which he finds to be also Aryan and not Turanian. He had the names of several tribes of Káfirs, *viz.* Sána, Wáma, Kantáwar, Bukiwáma, Muliarwáma, Shinogur, Kaliagal, Waigal and Nishigam. Each tribe is said to have a separate language.

In the course of one of his excursions up the Siah Koh he collected

specimens of five kinds of pines. Of these the Chilgoza (edible pine) grows at from 7000 to 9000 feet; the Deodar from 7,500 to 10,500; the Paloda from about 9,000 to 12,500. A pine with small berries like an *arbor vitæ* grows above the deodars.

Major Tanner had all along been most anxious to avail himself of the rare opportunity which offered for exploring the interesting and almost unknown country of Káfiristán, and after a great many difficulties was able to make a start in that direction with the aid of the Chúganí Chief, Azím Khán, with whom he had an interview at Jelálábád through the instrumentality of Mir Ahmed Khán, of Shewa in Kunár, and Shaik Hussain Khán, also of Kunár. He describes Azím Khán as a handsome, pleasant looking man, of ruddy countenance, rather short, but as strong as Hercules. His followers also had soft pleasant faces. The chief presented him with honey, horns and cheese, and Major Tanner gave him presents of *lungis*, sweetmeats *&c.* in return; after receiving these the chief held out his hand and protested a lifelong friendship, declaring that his country and towns were open to Major Tanner at all times. He promised to take him all over Kohistán and to the gates of Káfiristán.

Notwithstanding the very disturbed state of the country north of the Kábul river, and its being in a state of anarchy, in which every man's hand was against his neighbour, Major Tanner started from Jelálábád on the evening of the 15th May, disguised as a Kábuli, with six of Ahmed Khán's men and two of his own. After a little difficulty at the ferry over the Kábul river, they crossed the plain of Besud and entered the Paikoh Tangi Pass. They walked quickly through the beautiful plain of the Kunár Valley and reached Ahmed Khán's Fort at Shewa, where he was well received by the owner. Hardly had they entered the Fort, which is really a walled village containing not only Ahmed Khán's houses but those of his retainers and friends as well, than there was a great disturbance and firing of shots caused by the discovery of people coming down on the ripening crops, but they were beaten off. The next day passed quietly. Major Tanner had arranged with the Chúganí Chief Azím Khán to meet him at Shewa and the chief had been with Ahmed Khán some days, but deferred starting owing to the disturbed state of the country. On the next morning, at dawn, a large party of Ahmed Khán's enemies, hearing of Major Tanner's arrival and of that of their enemy Azím Khán, attempted to surprise the Fort, but Mir Ahmed Khán having been informed beforehand of their intentions had taken precautions and they were driven off with the loss of three men.

Major Tanner took advantage of the defeat of these hostile clans to make a start before they could collect again and, all arrangements being

complete, he set off in the evening with five Chúganís, three of his own men and Azím Khán. The greater part of the road led along the bank of the Kunár river, which they left at Islámpur, and then commenced the ascent of the sloping terraces near the hills.

When near Budiali, being apprehensive of meeting enemies of Azím Khán and Ahmed Khán, as they had been all along the route, they made straight up the face of the hill near that town. These hills are absolutely dead and barren, but at about 800 feet they found tufts of grass and at 1000 feet a scrubby bush. In the morning they went down to the bottom of the range they had been climbing all night and then ascended another ridge, the hills changing in appearance as they climbed ; at first a bush or a tree, then a wild olive, and, after going up some 1,500 feet, some green grass and a bush that bore some pleasant-tasting edible berries. The crest of this ridge was nearly 1,800 feet from the base and after proceeding along it for about an hour they reached one of Azím Khán's hamlets and rested there. The hills around were steep and craggy and supported stunted oak, wild olive &c., and at the rude huts there were clusters of date trees.

Major Tanner remarks that these are the only date trees he has seen so high as 4,500 feet, except those which grow at some places on the highest crags of the Western Ghauts ; but while on the Ghaut the fruit ripens about May, these trees showed no signs of buds even in that month.

Starting again, they followed the valley which rapidly ascended till they made the crest at 5,300 feet, and there they looked down on to Shúlút, about 1000 feet below them, and near the upper end of a narrow but highly cultivated valley. Shúlút was reached at sunset, and Azím Khán advised Major Tanner to pass himself off as a Khán from Kábul travelling to see the country, for the village was inhabited partly by his men and partly by another tribe. His Kábuli disguise had been hateful to him all along, but he was glad of it now because the people in a friendly sort of way came and sat down and moved about among the party at their pleasure. He was given food, a *chupatti* and a piece of cheese, but was too much fatigued to eat much. After a good sleep they went off early in the morning and ascended the pleasant valley of Shúlút. Oaks and olives clothed the sides of the hills and carefully-terraced fields were ranged along the sides of the streams. The notes of parrots, blackbirds and cuckoos were heard and little birds twittered in the branches. They crested the head of the valley at 7,300 feet and a noble view was before them. On one side Kúnd and its pine-clad spurs and white rounded snow crests, and on the other the Kunár valley, and beyond it the Bajour and Momund Hills. Below these were the terraces of Aret and just above them the chief town of that name, just clinging to the sides of a steep spur. Besides the chief town were smaller

ones in different parts of the valley. Every possible spot was terraced, and there did not seem room for another acre of cultivation in the neighbourhood.

They had a descent of over 2000 feet, and at 5,200 reached the beautiful mountain torrent that waters the cultivation. Crossing it by a wooden bridge, they passed under groves of walnuts and along the edge of delightful terraces of waving wheat. There was foaming and rushing water everywhere, and creepers and ferns grew in the crevices of the rocks, and on the flatter parts of the craggy spurs grew oaks and wild olive. Houses built partly of wood and partly of stone, with flat roofs and carved supporting posts and bearers, were situated here and there, sometimes in groups and sometimes singly on the most exposed positions. The chief Azím Khán conducted Major Tanner to a house some 200 feet above the stream and about half a mile from the chief town. Up the valley, looking past walnut groves, terraces and hamlets, he could just see the round snow peaks of Kúnd, rising out of the black pine forests that clothe the mountains from 7000 to about 11,000 feet. Below were groves, scattered houses and the roaring torrent fed by the snows of Kúnd. From all he could gather this collection of villages does not much differ from those of the Káfirs who build partly of wood and partly of stone.

Major Tanner says of the principal village that the houses are piled one above another, and every beam, doorway and shutter carved in a most elaborate manner. The designs are crude, it is true, but such a mass of carving he had never before seen anywhere.

In the principal town there are many hundred houses, and in the whole group he was told there were 1000, and this cannot be over the mark.

Major Tanner's arrival caused a disturbance on the part of the inhabitants which was only put down by the Chief's authority. He is all powerful and his word appears to be law.

In Aret, the largest Chúganí colony, there is no *baniya*, so that the people have to take their goods two days' journey before they can find a market.

Major Tanner found Chúganistán more extensive than he had been given to understand it was. What the number of the tribe may be Azím Khán could not say, but in the valley of Aret alone, there must be at least 5000 and they have many villages, or rather the heads of many valleys, the lower portions of which are inhabited chiefly by the Safis, the hereditary enemies of the Chúganís. The Safis are Afgháns and the Chúganís in Major Tanner's opinion are converted Káfirs. He liked the Chúganís; they are a quiet set, said to be faithful to their masters and true to their engagements. They are brave and well-disposed towards the English and,

Major Tanner thinks, would probably offer a good field for recruiting amongst a hardy race who have no sympathy with the Afgháns.

Major Tanner says that Azím Khán's wife and children moved about among them, and did their household duties without any shamefacedness. As they came up the valley, all the women greeted the Málik with a smile, and conversed without restraint. The young women have very handsome features, and some are very pretty but much disfigured by dirt.

A few days after Major Tanner's arrival in Aret, he had a bad attack of fever, which he got over and, though weak, made all arrangements for a final advance, when he had a second and very severe attack to which he nearly succumbed and which compelled him, most unfortunately, to abandon his design and return to Jelálábád.

After an appeal to Azím Khán's 'friendship', he was allowed to leave and was carried off between two poles to Jinjapur, about two days' journey By the kindness of the Jinjapur Málik he was safely conducted by the Málik's two sons and a large armed party, through a hostile country to the mouth of the Dar-i-nur, and eventually he reached Ahmed Khán's Fort at Shewa where he was safe, though the Fort was attacked immediately after his arrival by an armed party they had met on the road when going down the Dar-i-nur.

From Shewa he went down the Kunár river to Jelálábád on a raft.

The untoward failure of this expedition is much to be regretted as Major Tanner would undoubtedly have been able to throw much light upon this little known country had he been able to carry out his plans.

MAP
ILLUSTRATING THE
SURVEY OPERATIONS
DURING THE
AFGHAN CAMPAIGN OF 1878-79.

Scale 1 Inch = 30 Miles

Extract from the Map of Turkestan, 4th Edition; Dehra Dún, 1879.

Photozincographed under the orders of the Surveyor General of India, Dehra Dun and Calcutta, November 1879

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☞ Names of new genera and new species have an asterisk (*) prefixed.

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